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IN THE

Supreme Court of the United States RODAK, JR., CLERK

No. 77- 685

COUNTY OF SUFFOLK and CONCERNED CITIZENS OF MONTAUK, INC.,

Petitioners.

V.

SECRETARY OF THE INTERIOR,

Respondent,

NATIONAL OCEAN INDUSTRIES ASSOCIATION and NEW YORK GAS GROUP,

Intervenor-Respondents.

PETITION OF COUNTY OF SUFFOLK AND CON-CERNED CITIZENS OF MONTAUK, INC. FOR WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE SECOND CIRCUIT

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IN THE

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No. 77-

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v.

SECRETARY OF THE INTERIOR,

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NATIONAL OCEAN INDUSTRIES ASSOCIATION AND NEW YORK GAS GROUP,

Intervenor-Respondents.

PETITION OF COUNTY OF SUFFOLK AND CON-CERNED CITIZENS OF MONTAUK, INC. FOR WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE SECOND CIRCUIT

This petition for certiorari arises out of the Second Circuit's reversal on August 25, 1977 of a decision by the United States District Court for the Eastern District of New York rendered February 17, 1977 voiding certain offshore oil leases sold by the Secretary of the Interior in violation of the National Environmental Policy Act (NEPA), and enjoining further activities on the leases until the environmental impacts thereof are properly evaluated under NEPA by the Secretary. The leases are for

exploration and production of oil and gas on the Outer Continental Shelf (OCS) Sale 40 area in the Baltimore Canyon area off New Jersey and below Long Island.

Sale 40 is the first in the Mid-Atlantic OCS area. It involves 154 tracts, comprising an area of 867,750 acres, a potential of 50 oil producing platforms, more than 1,000 wells and 450 miles of offshore pipelines, increased oil tanker traffic as well as massive onshore petro-chemical and other support facilities. Thus, the Second Circuit's reversal clears the way for profound and irrevocable alteration of the Mid-Atlantic seascape and landscape despite the admittedly unresolved major risk of oil pollution to the Atlantic fishing grounds, and the risk of oil fouling of ocean beaches and parks and other grievous environmental impacts in America's most densely populated coastal area.

Opinions Below

The Second Circuit's opinion of August 25, 1977 is set forth in Appendix A to the Petition (unofficially reported 10 Environment Reporter Cases (E.R.C.) 1513.*

The District Court's opinion of February 17, 1977 is set forth in Appendix B. (9 E.R.C. 1798)

Jurisdiction

Petitioner's motion dated September 12, 1977 to stay issuance of the mandate of the Second Circuit pending application to the Supreme Court for a writ of certiorari pursuant to Rule 49(b) of the Federal Rules of Appellate Procedure, was denied by Order of the Second Circuit dated October 4, 1977. This Petition for certiorari is being filed within the prescribed ninety days after August 25, 1977. The jurisdiction of this Court is invoked under 28 U.S.C. Section 1254(1).

Questions Presented

- 1. Whether the Second Circuit erroneously substituted the "rule of reason" for the "clearly erroneous" rule (Rule 52a, F.R. Civ. Proc.) to justify its de novo review and reversal of the District Court's evidentiary findings on the inadequacy of the Secretary's environmental evaluation.
- 2. Whether the Second Circuit misapplied Citizens to Preserve Overton Park, Inc. v. Volpe, 401 U.S. 402 (1971), in denying the power of the District Court to review and find arbitrary, the Secretary's decision, which is based on an incomplete and defective administrative record, containing grossly erroneous cost-benefit data relied on by the Secretary in authorizing Sale 40, which data was unsupported and unexplained and was not even circulated to the public as required by NEPA.
- 3. Whether the Second Circuit erred in validating the Sale 40 Environmental Impact Statement (EIS) despite its recognition of the EIS's "apparent failure to deal as thoroughly with some environmental consequences of trans-

^{*} The judgment of the Second Circuit is set forth in Appendix C.

Prior opinions forming the historical background of this litigation are:

^{1.} The District Court's decision dated August 13, 1976, preliminarily enjoining Sale 40, scheduled for August 17, 1976. (9 E.R.C. 1769)

^{2.} The Second Circuit's opinion dated August 16, 1976 (9 E.R.C. 1793), staying enforcement of District Court's preliminary injunction.

^{3.} The Supreme Court's opinion dated August 19, 1976 (by Circuit Justice Marshall) (50 L. Ed.2d 38) declining to vacate the Second Circuit's stay of enforcement of the District Court's preliminary injunction.

^{4.} The Second Circuit's opinion on October 14, 1976 (9 E.R.C. 1794) reversing the District Court's preliminary injunction order.

portation (of Sale 40 oil) as might be hoped" on the assumptions (unsupported by the EIS) that Sale 40 is environmentally divisible and that the Secretary has the power to and will at some undetermined future date deal thoroughly with the oil transportation problem.

Statutes Involved

The statutes involved are:

Administrative Procedure Act, 5 U.S.C. Section 706(2);

National Environmental Policy Act, 42 U.S.C. Section 4332.

Statement of the Case

The Sale 40 Draft EIS was published on December 10, 1975. The Sale 40 Final EIS was released on May 25, 1976. Neither contained a cost/benefit analysis; the Final EIS noted that a cost/benefit analysis would be provided in a separate Sale 40 Program Decision Option Document (PDOD) prepared for the Secretary.

A separate Sale 40 PDOD was drafted and received by the Secretary on June 22, 1976. It was not circulated for public comment. In three pages of tables it estimated: a) the low and high case timetable of oil and gas development; b) the acreage, facilities and equipment expected to develop the Sale 40 resources; and c) the investment costs for low and high cases. The PDOD did not explain, document or support the estimates and the assumptions underlying the estimates and simply attributed the sources of its information to the United States Geological Survey, and the Atlantic Offshore Operator's Committee (a petroleum industry organization).

The cost-benefit data was not attached to the Environmental Impact Statement for Sale 40 (or otherwise circulated) as recommended by the Guidelines of the Council of Environmental Quality, 40 C.F.R. Sec. 1500.8 (a)(8), although the Second Circuit Court mistakenly assumed it was attached. (Appendix A, A30) The PDOD did not set forth responsible opposing views as to Sale 40 costs and benefits held by the relevant technical community.

On June 30, 1976, the Secretary announced his decision to hold Sale 40 on August 17, 1976. County of Suffolk, and others challenged this decision by moving for a preliminary injunction. Discovery was expedited and the case was set for hearing on the earliest possible date the parties could be ready. Subsequently, Respondent National Ocean Industries Associates together with eleven of its members, and the New York Gas Group, intervened as defendants. Evidentiary hearings consumed three weeks. Many distinguished experts testified for both sides. The attorneys worked days, nights and weekends to speed the trial because of the need for a prompt decision compelled by the August 17, 1976 sale date.

On August 13, 1976 the District Court issued its decision preliminarily enjoining Sale 40. Its opinion concluded that the Secretary's decision violated NEPA and insufficiently analyzed environmental dangers because the Final EIS and PDOD inadequately assessed the impact of state and local decisions on a) whether pipelines or tankers would be used to bring the oil ashore, and b) where onshore facilities could be located.

Respondents then moved in the Second Circuit Court of Appeals for a stay of enforcement of the District Court's preliminary injunction. The Second Circuit, forced to act on August 16, 1976, the eve of the sale, granted the motion, ruling that the sale in and of itself would not cause the petitioners any irreparable injury.

On the following day, August 17, 1976, the petitioners applied to Circuit Justice Marshall to vacate the stay. He declined to dissolve the stay. In his opinion of August 19,

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1976 he noted that he only had a few hours to review the District Court's opinion, the briefs of the parties and the four-volume EIS, and that he did not have nor could he meaningfully have considered the voluminous record compiled in the District Court. Mr. Justice Marshall found plaintiffs would not be irreparably injured if the Secretary were permitted to open bids, but if the government were to make an irreversible commitment of resources without preparing an adequate impact statement, this would constitute irreparable injury warranting injunctive relief. He made clear that invalidation of any resultant leases was a very real possibility should plaintiffs prevail on the merits.

In a brief opinion on October 14, 1976, the Second Circuit reversed the District Court's preliminary injunction order, holding that petitioners had not demonstrated that they would suffer irreparable harm between the date of the preliminary hearing and the trial, and that on its review of the record concerning the NEPA violation found by the District Court, there was some doubt whether petitioners would succeed on the merits at the trial. Respondents were advised that by proceeding with leasing prior to a final determination, they assumed the risk of an ultimate adverse decision.

After further pre-trial hearing and discovery, a trial on the merits was held before District Judge Jack B. Weinstein, at which all parties introduced extensive additional proof. Twelve hundred pages of new testimony were taken and numerous additional documents were received in evidence. In all, a total of 4,043 pages of testimony were taken, 32 witnesses were heard, 273 documents were received and the affidavits and proffers of proof for a substantial number of other persons considered.

The following disputed factual questions were decided by the District Court:

a) whether sufficient meaningful information was available to the Secretary at the EIS Sale 40 stage

with which to project likely and feasible pipeline routes to shore;

- b) whether such information could be used to assess the impact of state and local regulatory powers on the environmental and economic consequences of the Sale 40;
- c) was such information essential to the Secretary's cost-benefit analysis of Sale 40;
- d) was Sale 40 a unitary project without separate controlled arrangement for pipeline/tanker transportation problems via a Development Plan EIS and the Secretary's retained regulatory powers;
- e) whether despite meaningful information readily available to him, the Secretary's cost/benefit analysis was so grossly inaccurate and defective as to preclude him, as the trustee and fiduciary of the public interest OCS resources, from making an informed evaluation of Sale 40 in comparison with the possible alternatives;
- f) whether the Secretary failed to meaningfully consider alternatives such as the separation of exploration and production;
- g) whether the pre-Sale 40 historical evidence of the Secretary's "firm" commitment to proceed with Mid-Atlantic OCS leasing considered in conjunction with the Secretary's failure to adequately assess the vitally linked tanker/pipeline, cost/benefit alternatives and other critical NEPA issues—justified a finding that the NEPA review was a charade.

The District Court's second opinion (Appendix B) rendered February 17, 1977, on the evidence, found all of the subsequent questions of fact in the affirmative, and accordingly, enjoined further activities pursuant to the leases sold in August 1976, and declared the leases null and void.

The opinion, (which included Appendices totalling 36 pages* listing the witnesses and exhibits considered by the Court), concluded that the massive new evidentiary record served to confirm and expand the bases of the Court's earlier tentative conclusion in its decision of August 13, 1976 that NEPA had been violated. The Court summarized the factual findings for its conclusion that NEPA had been violated in a number of respects, as follows:

We find that the Secretary (1) ignored the practical effects of local governmental licensing, permitting, and review powers in the NEPA documents; (2) failed to consider the environmental impact of specific probable pipeline routes from the outer continental shelf, in spite of the fact that projection of such routes is routinely made by industry and could have been made by the Secretary or his agents; (3) greatly overstated peak oil and gas production for Sale 40 and significantly understated the cost of such production, including pipeline construction; this resulted in a serious lack of consideration of the likelihood and attendant dangers of increased tanker traffic and an overestimate of the net value of the entire project; (4) failed to consider the possible impact of particular tract-selection choices on the feasibility and sites of pipelines; there was no consideration of the alternatives of either excluding industry-preferred tracts, or including less highly desired tracts in the final sale offer because of related onshore impacts and developments; and (5) failed to consider the alternative of separating exploration from production leasing. Adequate consideration of these factors might have led to modifications in the Sale 40 leasing program, resulting in greater environmental protection without impairing reasonable exploitation of offshore hydrocarbon resources.

While there was substantial evidence that the Secretary's decision was not based upon a good faith consideration of relevant NEPA documents, but on decisions made privately and in advance of public hearings, we find it unnecessary to make any such finding. It is enough for purposes of this proceeding to detail the abstract and misleading aspects of the operative NEPA documents that prevented any realistic appraisal of either environmental dangers or the practical advantages and disadvantages that would result from the specific Sale 40 leases. Each of the inadequacies, considered below in detail, constitutes a violation of both the letter and spirit of NEPA and requires rescission of the Secretary's leasing decision.

On August 25, 1977, the Second Circuit handed down its opinion (Appendix A) reversing the District Court's injunction decision.

In an unusual usurpation of the District Court's fact finding functions, as applied to a massive fact intensive evidentiary record containing much sharply disputed live and expert testimony from which conflicting inferences could be drawn, the Second Circuit proceeded ad seriatim to burrow into the record, review the evidence and to appraise and set aside each of the District Court's factual findings. In doing so, it violated Rule 52(a) that District Court findings (particularly as to disputed issues of evidentiary fact) "shall not be set aside unless clearly erroneous". The Second Circuit substituted the substantive "rule of reason" test for the procedural "clearly erroneous" rule, delving into the trial record as if it were the District Court.

[•] Not printed herein.

Despite the Second Circuit's holding in New York v. NRC, 550 F2d 745, 752 (2nd Cir. 1977) that it was not required to "burrow into the documentary record in exactly the same way the District Court (did)."

In this process, the Second Circuit committed a number of errors. First was its erroneous assumption that the District Court's finding of EIS inadequacy under NEPA was based on reasons unrelated to testimonial credibility. In fact, the District Court relied heavily on live testimony which: a) sharply disputed data and statements in the EIS and PDOD; b) raised issues as to the credibility of conflicting expert opinions; and (c) from which conflicting inferences relevant to specific issues could be drawn. Second was the Second Circuit's application of the "rule of reason" as a standard of appellate review, in place of the Rule 52(a) constraints, on the assumption that it was in as good a position as the District Court to test the adequacy of the NEPA administrative and evidentiary records.

The incorrect standard of appellate review adopted by the Second Circuit led it to commit major factual errors.

Second Circuit Errors Regarding Tanker/Pipeline Issue

The Second Circuit, not enjoying the proximity of the District Court to the complex scientific and technical live testimony and the conflicts engendered thereby, was not in as good a position to determine whether the Secretary satisfied the "rule of reason".

As a result, its usurpation of the District Court's fact finding prerogative led the Second Circuit into serious factual errors and faulty legal premises leading to erroneous conclusions.

The Second Circuit rejected the District Court's finding that it was possible for the Secretary at the EIS Sale 40 stage to specify probable pipeline destinations. It adopted the contra premise that it was not possible to do so-a false premise because the Second Circuit overlooked the following meaningful information3 available to the Secretary which permitted him to project an inevitable pipeline route leading to the Philadelphia refinery area and to assess its environmental impact and that of tanker transportation alternatives-First, recent Environmental Protection Agency decisions raising the possibility of excluding the entire Atlantic Coast of New Jersey from any offshore oil lines, thus forcing any pipeline route to use a water route to reach refinery areas; Second, the likelihood that pipelines would follow a shore approach location in the Delaware Bay up the Delaware River to the Philadelphia area which contains the largest concentration of refineries in the Northeast (much larger than New Jersey); Third, the grave environmental and economic consequences, if a water route pipeline route to Philadelphia were constructed because of its impact on oyster beds and other important marine life, swimming, boating and other recreational activities on and around the Delaware Bay and River; Fourth, the fact that the alternative of using tankers to transport Sale 40 oil via the sealanes converging in the New York-New Jersey port refinery area posed a significant risk of oil pollution through tanker spills4 (a con-

(footnote continued on following page)

² For example, the conflicting estimates of Shell Oil Co. witness Brunjes "desk study" pipeline costs and petitioner's expert witness economist Donkin's actual experienced pipeline costs based on FPC, petroleum consultants, and major oil company data sources; conflict between Donkin's detailed documented testimony on oil and gas investment costs, reserves and peak production levels, and those contained in the Secretary's uncirculated 2-page PDOD cost/benefit analysis for Sale 40.

³ Appendix B, A71, A72, A74, A77, A78.

^{*}Testimony at the trial by New York Coastal Zone Management Planner DeWitt Davies established the significant risk of oil pollution to the New York-New Jersey Coastal Zone from increased tanker traffic carrying Sale 40 oil using the congested sea-lanes leading to the New York-New Jersey refinery area—a factor contributing to the likelihood of a pipeline route to the Philadelphia refinery area. Another such factor may be the legal inhibition of the Gateway National Recreational Area (16 U.S.C.

tingency which the Second Circuit itself ruled unacceptable, Appendix A, A25, A26); Fifth, the fact that the Secretary's estimated pipeline costs seriously understated their true costs.

The Second Circuit's false premise blinded it to the fact that the Secretary could have evaluated these factors and predicted the probable pipeline destinations, and their environmental and economic costs, and that these factors could have affected the Secretary's decision of whether or not to proceed with the Sale 40 project in its present form.

The Second Circuit's false factual premise regarding the tanker/pipeline issue led it to the erroneous conclusion that the Sale 40 project was environmentally divisible, and that the Secretary could defer confronting the transportation problem to the Development Plan stage. This is an untenable conclusion, because at this later point the vested grandfathered rights of existing OCS Sale 40 lessees, and massive expenditures and irretrievable commitments of resources would make unlikely any substantial modification or abandonment of the Sale 40 project, despite potential intractable transportation problems, and would foreclose the option of not proceeding with lease Sale 40 in its present form.

Second Circuit Errors Regarding the Cost/Benefit Issue

The District Court found that the Secretary's (PDOD) cost/benefit analysis (an essential part of the NEPA review) was so arbitrary because of its gross understatement of pipeline and other oil and gas investment costs, and because of its serious overestimate of oil and gas reserves and peak levels of production, that the Secretary

(footnote continued from preceding page)

Sec. 460cc-1), which authorized the Secretary to acquire lands located in the New York Harbor area (as defined in Sec. 460cc) owned by the States of New York or New Jersey or any political subdivisions thereof, only by donation.

could not reach an informed reasoned judgment as to the net value of project 40 and its comparison to alternatives and whether to hold Lease Sale 40, and hence that his decision was arbitrary.

The District Court's findings were based on the exhaustive expert written and live testimony of economist George Donkin, based on data readily available to the Secretary at the time of his June 22, 1976 Sale 40 PDOD. The respondents did not shake Donkin on cross-examination and did not present rebuttal evidence.

Nonetheless, the Second Circuit rejected the District Court's findings as substituting its judgment for that of the Secretary and exceeding the permissible scope of judicial review. On the basis of its own review of the disputed evidence, which as will be shown, was substantially inaccurate and incomplete, the Second Circuit adopted as its premises that the Secretary's cost/benefit analysis had been circulated through the NEPA review process, and received a proper NEPA review, that the NEPA administrative record was complete, and that in any event the Secretary's cost/benefit estimates were reasonable.

The Second Circuit's premise that the cost/benefit analysis received a proper NEPA review was based on its mistaken assumption that the cost/benefit analysis was attached to the EIS and circulated through the NEPA review process, thus providing an opportunity to the relevant scientific and technical community to comment on and air the technical issues presented by the cost/benefit analysis.

The Second Circuit's premise was false because, in truth, the Secretary failed to attach the cost/benefit analysis to the EIS and to circulate it through the NEPA comment and review process, thus enabling the cost/benefit analysis to escape the critical scrutiny of independent experts on oil and gas matters, and to evade the airing and

consideration of dissenting views in the Secretary's final environmental statement.

The Second Circuit's false premise led it to the erroneous conclusion that the cost/benefit analysis received a NEPA review, that the NEPA record was complete, that the Secretary's decision to hold Lease Sale 40 was an informed judgment, and could not be disturbed by the District Court's review which inquired into and reached the conclusion that the Secretary's judgment was uninformed and arbitrary because of gross defects in the cost/benefit analysis.

As with the pipeline, tanker issue, the 2d Circuit burrowed into the record on the cost/benefit issue in disregard of Rule 52a, and stumbled into a substantially incomplete and inaccurate review of the record.

The 2d Circuit concluded that the finding cost estimates relied upon by Mr. Donkin were not strictly comparable with those used by the Secretary and that the Interior Department's pipeline cost estimate of \$1,000,000 per mile was reasonable. (Appendix A, A34-A35)

The 2d Circuit stated that Mr. Donkin's finding cost included exploratory overhead, which is "not necessarily classified as capital investment cost". (Appendix A, A34)

The 2d Circuit completely missed the point by ignoring Mr. Donkin's testimony that the Secretary should have included exploration overhead cost as part of the investment or finding cost for the commodity (III J.A. 1887) and that the FPC treats exploration overhead as an investment cost (III J. A. 1890-1891). By not including exploration overhead as an investment cost, the Secretary understated the true investment costs of Sale 40.

In any event, as can be readily seen from Exhibit 250 (GLD-2), exploration overhead only accounts for between

4.9 percent and 12.6 percent of the total finding costs used by Mr. Donkin in developing his estimates of the extent to which the Secretary underestimated the total investment expenditures required to develop the OCS Sale #40 acreage. Thus, even if it is assumed that exploration overhead was inappropriately included by Mr. Donkin (and there is no record evidence to support this assumption), then Exhibit 250 (GLD-1) and (GLD-2) shows that Mr. Donkin's finding costs still would exceed those relied on by the Secretary by as much as 115.5%, and thus the Secretary's costs were not reasonable.

The 2d Circuit also said that Donkin "assumed that the Secretary's figures included such items as wages during pre-production activity whereas the EIS did not treat such items as capital investment costs". (Appendix A, A34)

Again the 2d Circuit misinterpreted Donkin. The Secretary's figures did in fact include such items as pre-production wages, as part of the capital investment costs. As Donkin testified, the \$3 million exploratory well cost figure (a capital cost item) used by the Secretary already included the labor (i.e. pre-production wages) associated with the drilling of those wells. (III J.A. 1882)*

The 2d Circuit also completely misinterpreted those portions of Mr. Donkin's testimony relating to pipeline costs. For example, the Court stated the following:

"Donkin admitted that in 1973 pipeline costs were only about \$485,000 per mile, and testified that by October 1976 the costs had risen 150%, which would imply a figure of about \$1,200,000." (Appendix A, A34)

What Mr. Donkin actually referred to in his testimony was a 1976 report wherein it was stated that since 1973, off-

[·] Relevant excerpts are printed as Appendix D.

[•] Table III—31, FES Sale 40, Vol. 2, p. 223 confirms Donkin's testimony. It says the estimated exploratory well cost of \$3 million is derived from the assumption that wages paid for exploratory drilling will be \$1,500,900 per year per exploratory drilling rig.

shore pipeline costs had increased nearly 150 percent from \$556,658 per mile (III J.A. 1863-1864), as opposed to the \$485,000 per mile figure cited by the Court, a figure supplied by government counsel. If the \$556,658 figure for 1973 is escalated by 150% this "would imply a figure of about" \$1,400,000 per mile (as opposed to the 2d Circuit's \$1,200,000). The figure of \$1,400,000 is approximately 40% greater than the Secretary's \$1 million per mile estimate. Thus by the terms of the 2d Circuit's own reasoning, the Secretary's estimate is a gross understatement of pipeline costs.

As a further example of the extent to which the Second Circuit misunderstood Donkin's testimony, the Court stated:

(Donkin's) "statistics relating to pipeline costs involved a project to be constructed well after the time the EIS was drafted, which would require that due allowance be made for inflation in costs and revenues." (Appendix A, A34)

This statement implies that Donkin's pipeline cost estimates included an inflationary allowance, whereas that used by the Secretary did not. This of course would be a valid criticism only if (1) Donkin's cost estimate was made subsequent to that of the Secretary and the two estimates were expressed in terms of current dollars; or (2) Irrespective of when the estimates were made, they were expressed in terms of noncomparable dollars with respect to time. Support for either of these conditions is not found in the record. As shown in Ex. 250 (GLD-3). Donkin used a pipeline cost estimate dated September 8. 1975 which is approximately nine months prior to the June 1976 Sale 40 PDOD (J.A. 3501) (Thus condition (1) was not satisfied). Moreover, although counsel for the government was given ample opportunity to provide evidence showing that the PDOD pipeline cost estimates were not stated in terms of 1976 dollars as was assumed

by Donkin, no such evidence was forthcoming. (J.A. 1864, 1865). (Thus condition (2) was not satisfied). Accordingly, it was proper to compare Donkin's pipeline cost estimate of \$1.75 million per mile with the Secretary's figure of \$1 million.

Finally, the 2d Circuit concluded "it is not surprising that the Department's peak production figures were high, since it envisioned getting the same amount of oil and gas out of the ground over a shorter period of time." (Appendix A, A35) This erroneous conclusion was based upon a misinterpretation of the record. To illustrate, the Court stated that Donkin's peak production estimates were based on a 27.08 to 30 years field life, as opposed to the Department's assumed field life of 25 years. In fact, as shown in Exhibit 250 (GLD-5), Mr. Donkin assumed that 85.2 percent of the gas reserves in the potential gas fields associated with this acreage would be produced within fifteen years. Although Mr. Donkin made no direct reference to the field life for gas production, the depletion schedule adopted clearly indicated a field life below the Department's assumed 25-year life. Similarly, the record shows that Donkin assumed a 27.58 years (not 30 years) field life for oil fields in his analysis,* which is virtually the same as that used by the Department. Indeed, whether the field life is 20 years, 25 years, or 27.08 years, the following testimony of Mr. Donkin reveals the irrelevance of this issue:

Now, I'm aware that in the Gulf of Mexico there are reservoirs that will produce 15 percent of their reserves in a given year. Then you have a much faster rate of decline thereafter, and believe me, I did it several ways. You can change the assumption any

[•] See Ex. 250-GLD-5, p. 2, Table 26 of "Calculation of New Oil Costs, United States, years 1959 through 1974", La Rue, Moore & Schafer, Petroleum Consultants, Dallas, Texas (May 1, 1975).

way you want to, but the results are going to be the same. You will not be able to reach peak production in 1989 as long as you are bringing them (reserves) on in 1981. (III J.A. 1893)

As shown at page 4 of Exhibit 250 (GLD-6), if peak gas production in the high reserves case is to obtain in 1989, given the production schedule assumed by the Department, a total gas reserve for this acreage of 14.2 trillion cubic feet is required. This reserve is 51 percent greater than the 9.4 trillion cubic feet resource estimate contained in both the EIS and the Sale #40 PDOD. Similar figures for the oil reserves required to attain the Department's peak oil production estimates in 1989 are 1.75 million barrels vs. 1.40 million barrels (a 25 percent error). Thus, it is clear that the extent of error associated with the Department's natural gas production estimates is far greater than the error reflected in the oil production forecasts and, as testified by Mr. Donkin:

"There is no way that you can produce 3,080,000 MCF per day in 1989 if you are going to produce a billion cubic feet a day in 1985 and 240,000 MCF per day in 1983 etc." from a reserve of 9.4 trillion cubic feet of gas. (III J.A. 1897; Exhibit 250 GLD-6, p. 404)

Thus, regardless of the field life assumed for natural gas, the Department's production forecasts for the Sale #40 acreage are in error by such a large magnitude that they simply cannot be construed as being within any zone of reasonableness and should be rejected in total as reflective of the annual benefits to be derived from this acreage.

The above excerpts of Mr. Donkin's testimony clearly show the many faults in the Second Circuit's analysis of the cost/benefit issue. But more importantly, they demonstrate the more basic error committed by the Second Circuit in undertaking trial court fact finding functions by its de novo review of the evidence.

Reasons for Granting the Writ

1. National Importance of the Case

The Sale 40 project opens up a virgin area of the Midatlantic to massive exploitation of oil and gas resources sought as part of this nation's development of new sources of energy.

The litigation is of substantial importance to the national OCS leasing program, the parties and to millions of people living in this region whose environment and livelihood may be affected. It has substantial irrevocable economic, social, environmental and political impacts on the most densely populated area of the United States. This Country's most valuable fisheries area and recreational beaches are threatened with irreparable harm from Sale 40 activities.

Conflict with Supreme Court and Other Appellate Decisions regarding Standard of Review under Rule 52(a)

The Second Circuit improperly construed the "clearly erroneous" standard of Rule 52(a), F.R. Civ. P. in applying a less restrictive standard of review of the District Court's factual determinations to set aside those findings. The Second Circuit gave the following reasons for its departure from the "clearly erroneous" standard of Rule 52(a):

- a—The District Court's findings of fact were based on documentary proof, which the Second Circuit was in as good a position as the District Court to appraise.
- b—The District Court's determination that the EIS fails to contain sufficient information to satisfy Section 102(2)(c) of NEPA, was for reasons unrelated to testimonial credibility.

c—The "rule of reason", is the appropriate standard of review governing the Appellate Court, and it supplants the "clearly erroneous" standard of Rule 52(a).

In each of these respects, the Second Circuit erred, and its decision represents a substantial departure from decisions in other circuits, and the Supreme Court.

The District Court's findings of fact were based on an evidentiary record consisting not only of documents, but on a vast amount of live testimony, raising sharply disputed issues of highly complex and technical evidentiary fact, involving conflicting inferences and matters relating to testimonial credibility.

The Second Circuit was not in as good a position as the District Court to appraise the massive evidentiary record. The Second Circuit's major factual errors and omissions previously noted, attest to its inferior position as weigher of the evidence and fact finder. As shown in the analysis of Donkin's testimony, the Second Circuit could not possibly grasp the complex and technical issues as did the District Court.

In eschewing the Rule 52(a) clearly erroneous standard, the Second Circuit's decision conflicts with the view of the Supreme Court that the "clearly erroneous" test applies to all the District Court's findings, regardless of the nature of the evidence.

United States v. Singer Mfg. Co., 374 U.S. 174, 194, n. 9 (1963)

Commissioner of Internal Revenue v. Duberstein, 363 U.S. 278, 291 (1960)

United States v. United States Gypsum Co., 333 U.S. 364, 394 (1948)

See also: 9 C. Wright & A. Miller, Federal Practice & Procedure: Civil § 2587 at 745, 746 (1971).

The Second Circuit's decision represents a view not supported by some prior decisions in its own circuit, and conflicts with decisions in other circuits, all of which are exhaustively reviewed in *New York* v. *NRC*, 550 F2d 745, 750-753 (2d Cir. 1977).

The Second Circuit also erred in confusing the Rule 52(a) standard of appellate review with the "rule of reason" test applicable in NEPA cases. The latter test applies to the issue of whether the documentary proof (i.e. the EIS) is factually adequate to meet NEPA's requirements. The District Court must decide this issue on the basis of a full administrative and evidentiary record satisfying the requisites of NEPA. (See discussion, infra, pp. 21-24).

Thus, upon appellate review of the District Court's factual findings on whether the EIS satisfies the "rule of reason", the Second Circuit is also governed by Rule 52(a) and may not set aside such findings unless shown to be "clearly erroneous". It did not make such showing.

3. Conflict with Decisions of the Supreme Court and Other Circuits on the Requisites of an Adequate NEPA Administrative Record

The Secretary's decision was not based on an adequate NEPA administrative record, and could not be deemed a well reasoned informed judgment taking a hard look at the major questions before him.

The Supreme Court, this and other circuits have laid down the requisities of a NEPA administrative record on which judicial review is to be based.

The judicial review is to be based on the full administrative record that was before the Secretary at the time he made his decision. Citizens to Preserve Overton Park v. Volpe, 401 U.S. 402, 419-420 (1971); a complete record must be generated in which the factual issues are fully de-

tailed, developed, explained, documented and ventilated. NRDC v. NRC, 547 F2d 633 (D.C. Cir. 1976), cert. granted Feb. 22, 1977, 97 S.Ct. 1098. The agency must acknowledge, consider and develop in the record a fair representation of responsible dissenting scientific and technical opinion, and foster a real give and take on the key issues NRDC v. NRC, supra; Committee for Nuclear Responsibility, Inc. v. Seaborg, 463 F2d 783, 787 (D.C. Cir. 1971). Cost/benefit data and analysis are relevant factors to be contained in a NEPA record. Chelsea Neighborhood v. U.S. Postal Service, 516 F2d 378 (2d Cir. 1975); Calvert Cliffs' Coordinating Committee v. AEC, 449 F2d 1109 (D.C. Cir. 1971); Natural Resources Defense Council v. Morton, 458 F2d 827 (D.C. Cir. 1972); EDF v. Corps of Engineers (Tombigee), 492 F2d 1123 (5th Cir. 1974); EDF v. Froehlke, 473 F2d 346 (8th Cir. 1972). The NEPA record, including the cost/benefit analysis must be circulated, 42 U.S.C. Sec. 4332(2)(c), CEQ Guidelines, Sec. 1500.8(a)(4) and (8), to achieve the required airing of differing views and completion of the record.

In order to test the adequacy of the record on which the Secretary acted, the District Court, as the reviewing court, was required to engage in a substantial inquiry, a thorough, probing, in-depth, searching and careful review of the record, immersing itself in and scrutinizing the record as a whole, including its supporting materials and evidence on technical and specialized matters, to enable it to penetrate to the underlying decisions of the Secretary.

The reviewing court performs such an examination and diagnosis to determine whether the Secretary has (1) provided genuine opportunities to participate in a meaningful way; (2) taken a good hard look at the major questions before him; (3) exercised a reasoned discretion; (4) made an informed and adequately explained judgment; (5) acted arbitrarily, made a clear error of judgment or otherwise failed to satisfy 5 U.S.C. Sec. 706(2)(A). Citizens, etc. v. Volpe, supra; NRDC v. NRC, supra; International

Harvester Company v. Ruckelshaus, 478 F2d 615 (D.C. Cir. 1973); Silva v. Lynn, 482 F2d 1282, (1st Cir. 1973); Ely v. Velde, 451 F2d 1130 (4th Cir. 1971); Kleppe v. Sierra Club, 427 U.S. 390 (1976).

Measured by these controlling standards as to the requisites of the administrative record, and the scope of permissible judicial review, the evidence before the District Court justified the scope of its inquiry and its factual finding that the Secretary's cost-benefit analysis was so grossly defective as to prevent the Secretary from reaching an informed decision on whether to hold Lease Sale 40.

In setting aside such factual findings, the Second Circuit imposed an unduly narrow scope of judicial review for the District Court, while at the same time, assumed for itself a far broader review role of the District Court's decision, thus compounding the errors committed by the Circuit Court.

Certiorari Granted in Pending Case involving Similar Questions relating to Adequacy of Administrative Record and Scope of Judicial Review

This Court has granted certiorari in a case involving similar questions to those presented by this petition. In NRDC v. NRC, 547 F2d 633, 644-646 (D.C. Cir. 1976), cert. granted February 22, 1977, 97 S.Ct. 1098, this Court will decide what constitutes an adequate administrative record, and the scope of judicial review of an agency determination based on administrative record lacking in elements which the reviewing Court perceives as necessary to fully develop and ventilate the issues. Although this involves an administrative record made in rule making proceedings

⁵ The administrative record here concerned numerical values quantifying the health effects of the reprocessing and high level waste management steps of the nuclear fuel cycle and was intended to be used for purposes of NEPA cost-benefit analysis in a nuclear reactor licensing proceeding.

under 5 U.S.C. Section 553, the holding in NRDC v. NRC would seem to apply a fortiori to the instant case where the agency provided no notice and opportunity to comment on an essential part (the cost/benefit analysis) of its NEPA administrative record, and where uncontradicted expert testimony demonstrated that the cost/benefit analysis was grossly defective.

5. Conflict with Decisions in other Circuit Courts as to Environmental Divisibility of a Project Subject to NEPA Review

The Second Circuit acknowledged that bringing the oil ashore presents the greatest environmental risks (Appendix A, A8-A9). It also recognized that there was a "failure of the EIS, despite its length, to deal as thoroughly with some environmental consequences of transportation as might be hoped", citing five (5) specific deficiencies in the EIS (Appendix A, A43-A44). Despite these risks and deficiencies and the defective cost/benefit analysis the Second Circuit concluded, sua sponte that tanker/pipeline transportation problems arising out of the project are easily divisible and continuously controllable through the requirement of a Development Plan EIS and the Secretary's retained regulatory powers (Appendix A, A44-A45). In raising this sua sponte suggestion, the Appellate Court apparently relied on Secretary Andrus' announcement in a news release issued March 1, 1977 (after the District Court's February 17, 1977 decision) that

"If our appeal is successful, I intend to require the preparation of an environmental impact statement prior to approving development plans for these leases." (J.A. 3650)

The Second Circuit's conclusion that the Sale 40 project is environmentally divisible rests on the legal premise that if the supplemental EIS at the development stage disclosed

that because of the danger of tanker spills, only pipelines were environmentally acceptable, but were not technically or economically feasible, the Secretary could exercise his regulatory power to suspend OCS operations until a technology is developed under which use of pipelines is economically and technically feasible. Implicit in the Second Circuit's legal premise are three assumptions: First is the assumption that the Secretary could or would suspend operations under existing Sale 40 leases, even if suspension prevented the transportation, refining and marketing of the Sale 40 oil and lead to a delay or shutdown of production operations and injury to OCS Sale 40 lessees' investments. Second is the assumption that the Secretary would or could suspend such operations and thereby substantially modify or abandon the Sale 40 project despite the massive expenditures and resources commitments made in connection with such project. Third is the assumption that despite such massive expenditures and resource commitments, divisibility of the project does not foreclose selection of alternatives to proceeding with the Sale 40 project.

The Second Circuit's legal premise concerning the Secretary's powers of suspension is untenable, as are its underlying assumptions, and conflicts with the Ninth Circuit's decision in *Union Oil Co.* v. *Morton*, 512 F2d 743 (9th Cir. 1975).

The Second Circuit posits the legal theory that the Secretary may promulgate regulations providing for indefinite suspension of Sale 40 leases awaiting development of an environmentally and economically feasible pipeline technology. Since indefinite suspension is the equivalent of cancellation, the Second Circuit's legal premise flies in the face of *Union Oil Co. v. Morton*, 512 F2d 743 (9th Cir. 1975), which ruled that the Secretary may not cancel an OCS lease for violation of rules issued after the lease has been executed.

The Second Circuit's theory of environmental divisibility also represents incremental decision making of the type NEPA is intended to prevent, and is in conflict with decisions in its own and other circuits: New York v. NRC, 550 F2d 745, 750-753 (2d Cir. 1977); NRDC v. NRC, 539 F2d 284 (2d Cir. 1976); NRDC v. NRC, 547 F2d 633 (D.C. Cir. 1976), cert. granted Feb. 22, 1977, 97 S.Ct. 1098; Scientists' Institute for Public Information v. AEC, 481 F2d 1079 (D.C. Cir. 1973); Scherr v. Volpe, 466 F2d 1027, 1034 (7th Cir. 1972); Environmental Defense Fund v. T.V.A., 468 F2d 1164, 1183-1184 (6th Cir. 1972); Izaak Walton League v. Schlesinger, 337 F. Supp. 287, 294 (D.D.C. 1971); Conservation Society of Southern Vermont, Inc. v. Secretary of Transportation, 508 F2d 927 (2d Cir. 1974).

Divisibility of the Sale 40 project will not accomplish the environmental protection purposes envisaged by the Second Circuit because the commitment and expenditures of massive resources on the Sale 40 project without sufficient forethought having been given to the tanker/pipeline and cost/benefit issues, make future modification of that project unlikely, despite the fact that undesirable environmental consequences are disclosed by the Supplemental Development Plan EIS if and when it is ultimately drafted New York v. NRC, 550 F2d 745, 750-753 (2d Cir. 1977).

Furthermore, divisibility by encouraging irretrievable commitments and fragmented growth tips the cost/benefit balance in favor of development and forecloses serious consideration of more desirable alternatives or less detrimental options than Sale 40. Natural Resources Defense

Council v. NRC, 539 F2d 284 (2nd Cir. 1976), cert. granted March 28, 1977, sub nom Allied General Nuclear Services, et al. v. NRDC, Docket No. 76-654; 76-762; 76-769; 76-744; Scientists Institute v. AEC, 481 F2d 1079 (D.C. Cir. 1973).

If the scales were not so tipped, it would result in the reductio ad absurdum of no benefit despite gargantuan cost. Thus, if the Second Circuit had grasped the defectiveness of the cost/benefit analysis as a factor invalidating the Sale 40 project, it could not have reached the non sequitur conclusion that the Sale 40 project was environmentally divisible.

Conclusion

The serious environmental consequences incident to the transportation problems, and the defective cost-benefit analysis require a hard look by the Secretary now before irretrievable resources are committed to such an extent that the momentum of the program cannot be slowed much less stopped. With each further commitment, additional options are foreclosed. Even assuming the good faith of the Secretary, it is not proper review under NEPA to evade any of the hard environmental questions by leaving them to the Secretary for future resolution.

Deferral will lead to the contradiction of a faulty costbenefit analysis skewed in favor of continued Sale 40 development and operations, despite the risk of increased environmental damage due to tanker oil spills, and foreclosure of alternatives.

For the foregoing reasons the petition for certiorari should be granted to permit review and correction of

⁶ Such alternatives were not considered in the EIS, but were identified in the expert testimony of George Donkin and include increasing Gulf of Mexico oil and gas production through efforts to develop and produce reserves on: Producible shut-in leases;

⁽footnote continued on following page)

⁽footnote continued from preceding page)

non-producing reservoirs; drilling new wells in currently producing oil and gas reservoirs; increasing production from existing production wells up to levels approximating their respective MPR's (Maximum Production Rates). (Ex. 73)

the serious errors of the Second Circuit, whose decision departs substantially from the controlling standards applicable to a) appellate review of District Court factual determinations, b) scope of judicial review of agency determinations; and c) agency compliance with NEPA.

Dated: November 11, 1977

Respectfully submitted.

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APPENDIX A.

SECOND CIRCUIT'S OPINION, AUGUST 25, 1977

UNITED STATES COURT OF APPEALS

FOR THE SECOND CIRCUIT

Nos. 1187, 1258-September Term, 1976.

(Argued April 25, 1977

Decided August 25, 1977.)

Docket Nos. 77-6049, 77-6050

COUNTY OF SUFFOLE, COUNTY OF NASSAU, TOWN OF ISLIP, TOWN OF HEMPSTEAD, TOWN OF NORTH HEMPSTEAD, TOWN OF OYSTEB BAY, TOWN OF HUNTINGTON, and the BOARD OF TRUSTEES OF THE TOWN OF HUNTINGTON AND CONCERNED CITIZENS OF MONTAUK, INC.,

Plaintiffs-Appellees,

-against-

Secretary of the Interior, et al.,

Defendants-Appellants,

NATIONAL OCEAN INDUSTRIES ASSOCIATION, et al., and New York Gas Group, Intervenor-Defendants-Appellants.

THE NATURAL RESOURCES DEFENSE COUNCIL, INC.,

Plaintiff-Appellee,

-against-

Secretary of the Interior, et al.,

Defendants-Appellants,

NATIONAL OCEAN INDUSTRIES ASSOCIATION, NATIONAL SUPPLY COMPANY, CONTINENTAL OIL COMPANY, DIAMOND M.

DRILLING COMPANY, DIGICON, INC., DRESSER INDUSTRIES, INC., HOUSTON OIL & MINERALS CORPORATION, LEVINGSTON SHIPBUILDING COMPANY, MURPHY OIL CORPORATION, OCEAN PRODUCTION COMPANY, TRANSCO COMPANIES, INC. and Zapata Corporation,

Intervenor-Defendants-Appellants.

Before:

Mansfield, Circuit Judge, Smith, Chief Judge, and Palmieri, District Judge. ••

Appeal from a judgment of the United States District Court for the Eastern District of New York, Jack B. Weinstein, Judge, voiding leases made by the Secretary of the Interior of an area of the Atlantic Continental Shelf known as Sale 40 for failure to comply with the requirements of §102(2)(C) of the National Environmental Policy Act, 42 U.S.C. §4332(2)(C).

Reversed.

IRVING LIKE, Special Counsel for County of Suffolk, Babylon, N.Y. (Patricia A. Dempsey, Attorney, Richard C. Hand, Esq., Babylon, N.Y., of counsel), for Plaintiff-Appellee County of Suffolk.

WILLIAM GITELMAN, County Attorney of Nassau County, Mineola, N.Y. (John F. Picciano, Deputy County Attorney, Mineola, N.Y., of

Appendix A.

counsel), for Plaintiff-Appellee County of Nassau.

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- J. Christopher Jensen, Assistant United States Attorney, Brooklyn, N.Y., John J. Zimmerman, Attorney, Department of Justice, Washington, D.C. (David G. Trager, United States Attorney for the Eastern District of New York, Bernard J. Fried, Cyril Hyman, Assistant United States Attorneys, Brooklyn, N.Y., Lawrence R. Hoese, Attorney, Department of Interior, Washington, D.C., of counsel), for Federal Defendants-Appellants.
- Jon M. Kaufman, Esq., New York, N.Y. (Kommel, Rogers, Kaufman, Lorber & Shenkman, Sarah Chasis, Attorney, Natural Resources Defense Council, Inc., New York, N.Y., of counsel), for Plaintiff-Appellee Natural Resources Defense Council, Inc.
- E. EDWARD BRUCE, Esq., Washington, D.C. (Mark D. Nozette, Esq., Covington & Burling, Washington, D.C., Gene W. Lafitte, Esq., J. Berry St. John, Jr., Esq., Liskow & Lewis, New Orleans, La., George A. Burrell, Esq., New York, N.Y., of counsel), for Intervenor-Defendants-Appellants National Ocean Industries Association, et al.
- Shearman & Sterling, New York, N.Y. (Robert L. Clare, Jr., Esq., W. Foster Wollen, Esq., Joseph T. McLaughlin, Esq., Kenneth M:

Of the United States District Court for the District of Montana, sitting by designation.

Of the United States District Court for the Southern District of New York, sitting by designation.

Kramer, Esq., New York, N.Y., of counsel), for Amici Curiae Exxon Corp., Gulf Oil Corp., Mobil Oil, Shell Oil; Robert M. Perry, Esq., Houston, Texas, of counsel for Exxon Corp.; James A. Boone, Esq., A. Paul Brandimarte, Jr., Esq., New Orleans, La., of counsel for Gulf Oil Corp.; E. M. Sutter, Esq., R. B. Shaw, Esq., New Orleans, La., of counsel for Shell Oil Corp.; Arthur Aitkens, Esq., New York, N.Y., of counsel for Mobil Oil Corp.

- Baker & Botts, Washington, D.C. (Gordon Gooch, Esq., John P. Mathis, Esq., Thomas B. Hudson, Esq., Washington, D.C.; Gray Castle, General Counsel, John T. Rafferty, Esq., NL Industries, Inc., New York, N.Y., of counsel), for Amicus Curiae NL Industries, Inc.
- DAVID J. MUCHOW, General Counsel, American Gas Association, Arlington, Va. (Kevin B. Belford, Assistant General Counsel, Arlington, Va., of counsel), for Amicus Curiae American Gas Association.
- Willcox, Pirozzolo & McCarthy, Boston, Mass. (Jack R. Pirozzolo, Esq., Richard F. McCarthy, Esq., Boston, Mass., of counsel), for Amicus Curiae New England Council.
- Rosenman Colin Freund Lewis & Cohen, New York, N.Y. (Samuel H. Lindenbaum, Esq., Martin S. Baker, Esq., Thomas J. DeZure, Esq., New York, N.Y., of counsel), for Amicus Curiae Association For A Better New York, Inc.

- VINSON & ELKINS, Washington, D.C. (Rush Moody, Jr., Esq., Michael J. Henke, Esq., Washington, D.C., of counsel), for Amicus Curiae The Business Roundtable.
- Stanley C. Van Ness, Public Advocate of the State of New Jersey, Trenton, N.J. (Robert P. Corman, Assistant Deputy Public Advocate, Division of Public Interest Advocacy, Department of the Public Advocate, Trenton, N.J., of counsel), for Amicus Curiae Tri-County Committee.
- Winer, Neuburger & Sive, New York, N.Y.
 (David Sive, Esq., William Ginsberg, Esq., New York, N.Y., of counsel), for Amici Curiae Friends of the Earth, Inc., The Sierra Club and its Atlantic Chapter, The Wilderness Society, Long Island Sound Task Force, Inc., Long Island Environmental Council, Inc., Group for America's South Fork, Inc.
- Drexel D. Journey, General Counsel, Federal Power Commission, Washington, D.C. (Robert W. Perdue, Deputy General Counsel, Allan Abbot Tuttle, Solicitor, John J. Lahey, Attorney, Federal Power Commission, Washington, D.C., of counsel), for Amicus Curiae Federal Power Commission.

Mansfield, Circuit Judge:

As our energy demands escalate, so does the running battle between the environmentalists and the exploiters of our natural resources. This appeal represents another

skirmish in that confrontation. The principal issue is whether an Environmental Impact Statement (EIS) prepared by the Department of Interior for the purpose of determining whether to authorize a program for exploitation of our oil and gas resources contained sufficient information with respect to the environmental consequences of the proposed action and alternatives to satisfy the requirements of §102(2)(C) of the National Environmental Policy Act (NEPA), 42 U.S.C. §4332(2)(C). The genesis of the appeal lies in the decision of the Executive Branch of the United States, as part of this nation's development of new sources of urgently needed energy, to accelerate the leasing to private industry of our federally-owned Outer Continental Shelf (OCS) for oil and gas exploration, development, and production, provided such operations might be undertaken in compliance with our National Environmental Policy Act, 42 U.S.C. §§4321, et seq.

Following the President's proposal in January, 1974, that off-shore leasing be accelerated to the extent consistent with environmental safeguards, a "programmatic environmental impact statement" (PEIS) was prepared by the Department of Interior which focused generally on the basic environmental impacts of such a major program and analyzed alternative energy sources (onshore oil and gas resources, oil shale, geothermal energy, solar energy and conservation). After nine days of hearings in Alaska, California and New Jersey, at which the testimony of some 344 witnesses was taken, the PEIS was revised and published in final form in three volumes on July 11, 1975. On September 29, 1975, the Secretary of Interior (Secretary) adopted a proposed accelerated leasing schedule.

Steps were soon taken to implement the Secretary's action. With respect to the mid-Atlantic OCS area, the Bureau of Land Management of Interior (BLM) designated a broad area off the New Jersey-Delaware-Maryland coast

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known as the Baltimore Canyon Trough for consideration, obtaining from 13 different government agencies reports as to the potential mineral resources in the area and the effect of exploitation on the resources and environment. Out of the designated area BLM selected 1,151 tracts (6.5 million acres) and asked private industry to specify those tracts which it might be willing to lease and state and local governments to designate those tracts which they believed should not be offered for leasing. Industry nominated 557 tracts (3.2 million acres), and the coastal states offered various comments. BLM then consulted with representatives of private industry and of Geological Survey to determine which tracts were believed to have the highest hydrocarbon potential and which posed environmental hazards, such as dangers to navigation and shipping, marine resources and habitat. On August 20, 1975, the BLM announced that 154 tracts located some 50 to 90 miles off the coast of New Jersey had tentatively been selected out of the 557 for proposed leases to be known as Sale 40.

Pursuant to this decision BLM prepared a draft site-specific Sale 40 Environmental Impact Statement (EIS) evaluating the environmental consequences of opening up this first offshore field in the Atlantic coastal area for oil and gas development. During August to October, 1975, interested parties, state representatives and those representing various federal agencies and bureaus were given an opportunity to review the working draft, which was published in December and became the subject of hearings in January, 1976, at which the testimony of 137 witnesses was taken and written comments were received and studied. On May 25, 1976, the Final EIS, consisting of four volumes totalling some 1,998 pages (not including some exhibits) which had been revised and amplified as a result of the testimony and comments, was published.

On June 30, 1976, the Secretary, after reviewing a Program Decision Option Document (PDOD) prepared by his staff, and after holding meetings to discuss the issues with his staff, announced his decision to go forward with lease Sale 40 on August 17, 1976. Within a matter of days the National Resources Defense Council, the State of New York, and a number of Long Island counties and towns, in an action consolidated with an earlier action by the Counties of Suffolk and Nassau before Judge Weinstein of the United States District Court for the Eastern District of New York, brought suit to enjoin the proposed sale, alleging that the EIS did not comply with the requirements of \$102(2)(C) of the National Environmental Policy Act, 42 U.S.C. §4332(2)(C).2 On August 13, 1976, Judge Weinstein, after hearings, granted a preliminary injunction against the lease sale. Recognizing that oil spills presented the greatest environmental risk of offshore oil development,

that tankers generally spill far more oil than pipelines in transporting oil to shore, and that the EIS assumed that pipelines would be used at the Sale 40 site, the court found sua sponte that the EIS had not explored adequately the possibility that affected state and local governments would bar the landing of pipelines on their shores and thereby necessitate the use of tankering and increase the hazards of oil pollution.

Three days later we stayed enforcement of the preliminary injunction, finding no reason to believe that irreparable harm would occur pending the ultimate resolution of the lawsuit if the lease sale were allowed to take place. Justice Thurgood Marshall refused to vacate our stay, noting in his written opinion issued August 19, 1976, that the sale could always be voided in the event NEPA violations were ultimately found. 429 U.S. 1307 (1976). On August 17, therefore, the Secretary conducted lease Sale 40 as scheduled accepting bids on 93 tracts within the sale area, for which bonuses totalling \$1.128 billion were paid, and executing leases of those tracts to the successful bidders for exploration and development of oil and gas. We reversed the grant of the preliminary injunctive relief for substantially the same reasons as those underlying our stay of its enforcement, - F.2d - (2d Cir. Oct. 14, 1976).

The suit came to trial in early 1977 and, on the basis of further testimonial and documentary evidence, the district court again concluded that the requirements of NEPA had not been met. Relying on the testimony of a Shell Oil Company executive called by defendant-intervenor National Ocean Industries Association, Judge Weinstein found that the EIS could have and should have projected possible pipeline routes, and that it then would have been possible to evaluate the acceptability of those routes under existing state and local land use controls, the environ-

The State of New York subsequently withdrew from the case.

In addition, plaintiffs alleged violations of the Coastal Zone Management Act, 16 U.S.C. \$\$1451 et seq.; the Administrative Procedure Act, 5 U.S.C. \$\$704-706; the Outer Continental Shelf Lands Act, 43 U.S.C. \$\$1331 et seq.; laws dealing with state ownership of land up to 3 miles offshore, 43 U.S.C. \$\$1301-1303, 1311 et seq.; laws relating to the administration of public lands, 43 U.S.C. (\$1361 et seq.; laws regulating the administration of fish, shellfish and wildlife resources, 16 U.S.C. \$6742a et seq.; laws relating to the protection and conservation of wildlife, 16 U.S.C. 66661 et seq.; laws protecting migratory game and birds, 16 U.S.C. \$5701 et seq.; laws governing fish restoration and management projects, 16 U.S.C. §777; the Federal Water Pollution Control Act, 33 U.S.C. \$61251 et seq.; laws relating to land and water conservation funds, 16 U.S.C. 66460e-5 et seq.; the Anadromous Fish Conservation Act, 16 U.S.C. 66757a et seq.; the Migratory Bird Treaty Act, 16 U.S.C. \$6703 et seq.; the Historic Sites Act, 16 U.S.C. \$61531 et seq.; the Marine Mammal Protection Act, 16 U.S.C. 661361 et seq.; the Intergovernmental Cooperation Act, 42 U.S.C. \$\$4201 et seq.; fair value market requirements for sales and leases, 31 U.S.C. 6483a; the Energy Supply and Environmental Act, 15 U.S.C. \$6791 et seq.; the Energy Policy and Conservation Act, 42 U.S.C. \$56201 et seq.; Executive Order No. 11912, and a number of manuals, guidelines, and orders relating to the preparation of environmental statements.

mental impacts of those routes, and the economic feasibility of pipelining. Secondly, the court found that the EIS and its accompanying program decision option document (PDOD) substantially overestimated the projected daily production of the field and underestimated finding costs and the costs of pipeline construction, thereby overstating the economic feasibility of pipelining oil to shore and rendering the picture of overall costs and benefits unrealistically attractive. Thirdly, the court held that the EIS should have discussed the effect of tract selection on pipeline routes and evaluated the alternatives of offering for lease less-environmentally hazardous tracts, which had not been offered, in lieu of tracts actually offered. Finally, the court found that the EIS inadequately discussed the alternative of postponing the decision to lease until after further federal exploration of the area. For these reasons Judge Weinstein, concluding that the EIS violated NEPA, declared the leases null and void and enjoined the parties from exercising any powers purportedly granted by the leases.

Defendants here challenge all of Judge Weinstein's findings of deficiencies in the EIS. In addition, they contend that the district court should not have considered de novo testimony as to the accuracy of the Department's scientific and economic data, that it should not have reviewed the PDOD at all, and that even if the EIS was inadequate the district court had no power to remedy any violation by voiding the leases. Because we agree with appellants that the EIS and its accompanying PDOD were not inadequate, we reverse.

DISCUSSION

A threshold issue is the standard of review by which we are governed. To the extent that Judge Weinstein's find-

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ings resolve any disputed issues of evidentiary fact we are, of course, governed by the mandate of Rule 52(a), F.R. Civ.P., that they "shall not be set aside unless clearly erroneous." Moreover, where such findings are based on demeanor testimony, as distinguished from documentary proof which we are in as good a position as the district court to appraise, the district judge's findings will be set aside only in exceptional circumstances, United States v. Aluminum Co. of America, 148 F.2d 416, 433 (2d Cir. 1945) (L. Hand); see also Alabama Power Co. v. Ickes, 302 U.S. 464, 477 (1938); Adamson v. Gilliland, 242 U.S. 350, 353 (1917); Davis v. Schwartz, 155 U.S. 631, 636 (1895). However, a less restrictive standard of review is to be applied upon review of a district judge's determination for reasons unrelated to testimonial credibility that an EIS fails to contain sufficient information to satisfy §102(2)(C) of NEPA. In making such a determination a court is governed by the "rule of reason," under which an EIS need not be exhaustive to the point of discussing all possible details bearing on the proposed action but will be upheld as adequate if it has been compiled in good faith and sets forth sufficient information to enable the decision-maker to consider fully the environmental factors involved and to make a reasoned decision after balancing the risks of harm to the environment against the benefits to be derived from the proposed action, as well as to make a reasoned choice between alternatives. Natural Resources Defense Council v. Callaway, 524 F.2d 79, 93 n.12 (2d Cir. 1975); Sierra Club v. Froehlke, 534 F.2d 1289, 1299 (8th Cir. 1976); Sierra Club v. Morton, 510 F.2d 813, 819 (5th Cir. 1975); Environmental Defense Fund, Inc. v. Corps of Engineers, 492 F.2d 1123, 1131 (5th Cir. 1974); Natural Resources Defense Council, Inc. v. Morton, 458 F.2d 827, 834 (D.C. Cir. 1971).

Such a determination, although it may be labelled a "finding" by the district court, is not strictly a finding of fact but rather an exercise in judgment as to what is reasonable under given circumstances which, of course, may vary from case to case. Although the district judge's evidentiary findings may remain undisturbed, it is our duty to insure that the district court has properly applied the rule of reason in judging the adequacy of an impact statement and has interpreted NEPA in light of its evident purposes, which are "to enable those who did not have a part in [the EIS'] compilation to understand and consider meaningfully the factors involved,' and to compel the decisionmaking to give serious weight to environmental factors in making discretionary choices." Sierra Club v. Morton, 510 F.2d at 819. In performing this duty we are in as good a position as the district court to determine on the undisputed facts what could reasonably be demanded of the EIS in issue. With these principles in mind we turn to the district court's decision.

Claim that EIS failed to consider effect of state and local regulations on the mode of transportation to be used and to project "likely" pipeline routes and landfalls.

The district court found that the EIS, after assuming that pipelines rather than tankers would be used to transport any discovered oil ashore, "virtually ignored" the powers of state and local governments along the coast to block or impose heavy burdens on pipelines and thereby to necessitate the use of tankers and increase the risk of oil pollution. Referring to the zoning ordinances of numerous municipalities along the coast, which could be used to bar or restrict placement of pipelines within their respective jurisdictions, the district court noted that "the number

of authorities with power to affect the [pipelining] operation multiplies into the thousands."

In fact, as the district court acknowledged, the EIS does contain numerous references to state and local regulatory powers and procedural requirements that could be invoked to restrict pipelines, their landfalls, onshore routes, activities, operation, and effects. Repeatedly the EIS advises that all onshore development associated with the offshore oil and gas operations, including pipeline sites, routing and use, would be controlled by state and local authorities and be subject to their approval and regulation through land use controls. However, the district court brushed these references aside as too vague and abstract. Judge Weinstein reasoned that in order to assist a decision-maker in

Similarly, the PEIS repeatedly makes it clear that all onshore development, including pipelines, is subject to state regulatory authority, Vol. I, PEIS, pp. 131-33, Vol. II, PEIS, pp. 193-94, 774, 908-9, 951-52, 1004-5.

State regulatory programs with respect to onshore activities are thoroughly discussed in the EIS, Vol. I, pp. 58-61, as is the status of state Coasual Zone Management Act programs under federal and state legislation, Vol. II, EIS, pp. 266-91.

Finally, Volume III of the EIS, which publishes the responses of the Department of Interior to questions, criticisms, and comments, repeatedly solverts to the fact that the placement of pipelines in state waters and ca shore is subject to state and local land use regulations and approvals. See, e.g., Voi. III, EIS, p. 32.

The EIS states that onshore development "can ultimately be broadly controlled by the states," Vol. I, EIS, p. 40, that "any OCS-related facility development in the coastal zone would be subject to these [state] regulations," id. p. 50, that the location of onshore facilities, including terminal and storage facilities, operations bases, gas processing plants and onshore pipelines, depends on how land use controls are exercised by the states, Vol. II, EIS, pp. 450-51, 453-54, that "state and local planning and regulatory authorities provide the primary framework" for location of pipelines id. p. 456, that pipeline planning must be coordinated by the Secretary with the affected states, that pipeline approval "would be within the jurisdiction of the State," id. p. 586, and that the use of pipelines would depend on the "receptivity of state and local jurisdictions to the approval of the necessary pipeline land-falls."

making practical determinations the EIS should have projected routes that pipelines would be "likely" to take from the field to refineries in New York, Philadelphia and Baltimore, even though no oil had as yet been discovered within the half-million acres of ocean bottom, some 50 miles by 50 miles in size, which was under consideration for lease, and even though one could not specify the location or locations where it should be discovered, much less the quantity and quality of oil that might be discovered. Any projected routes would of necessity, therefore, have to be arbitrary, and might bear no similarity to the routes that would actually be proposed upon discovery of oil. The court nevertheless concluded that, if projections of such "likely" routes had been prepared and used, the EIS could then have assessed the extent to which the proposed development of the Sale 40 area conformed to existing state and local land use regulations prevailing in the locations of the projected routes, the environmental consequences of such pipeline routes, and the extent to which it was realistic in political and economic terms to expect that pipelines would in fact be used. In support of his analysis, Judge Weinstein noted that Shell Oil Company had made such projections as part of its feasibility and cost study in developing a bidding strategy for the sale.

Appellants contend that such route projections and concomitant examinations of existing land use controls would be of no value to a decision-maker, since the building of pipelines is at least three years down the road, and likely routes cannot be projected until oil is discovered, its source located, and its quality, quantity and pumpability determined. Since the pipeline routes can be fixed only after these factors are known and their location is subject to control by the government, the issues raised are divisible from those presented by the sale of the leases and can finally be resolved at a later point. In taking this position

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appellants do not go so far as to suggest that the EIS should dispense with the necessity of collecting such relevant facts as are now available and of discussing their possible environmental significance. It is recognized that the EIS must consider all significant environmental consequences that can reasonably be expected to flow from the decision to which the EIS relates. An EIS cannot safely ignore clear environmental consequences of the decision at hand on the ground that another statement will be forthcoming later. Since the lease contract presented for the Secretary's consideration would grant to each lessee of a tract the right for five years to search for oil and gas in economic quantities and upon such discovery to produce and transport the oil and gas to shore as long as it could be produced in paying quantities, it was essential to consider and weigh the environmental aspects of transportation, as well as of exploration and production, to the extent "meaningfully possible," see NRDC v. Morton, 458 F.2d at 837, before deciding whether to authorize the leasing program.

The EIS here does indeed discuss in considerable detail the environmental risks involved in transporting any oil that might be discovered. Its discussion proceeds, however, on the basis that, because the development of our nation's offshore oil and gas deposits is too massive and long-term a project to be covered adequately in any single EIS of practical utility for decision-making purposes, the project must logically be broken down into possibly three stages according to the federal action proposed to be taken, with a separate EIS and evaluation by the Secretary before proceeding with each such step. The first stage or step was to decide whether to accelerate the Department's offshore leasing program at all and, if so, in what order to offer the various offshore fields. This threshold decision was aided by the preparation of a programmatic environ-

mental impact statement (PEIS), which discussed other major alternatives for meeting the nation's energy needs and evaluated in general terms the environmental problems of offshore oil and gas production. If the Secretary had decided not to authorize leasing of the OCS, no further action would be required. However, on the basis of the PEIS, the Secretary announced an accelerated leasing program on September 29, 1975, which necessitated proceeding further.

The second stage was to decide what specific offshore areas might be offered for lease. Since the PEIS would not be sufficient for use in deciding whether to go forward with the leasing of specific areas, it was contemplated that the Department would prepare a more detailed site-specific impact statement for each sale area. Accordingly, to aid the Secretary in deciding whether to proceed with lease Sale 40, the instant EIS was prepared, discussing oil and gas pollution problems that might be expected to arise in the Sale 40 area generally, including problems arising out of transportation of oil to shore. The Sale 40 EIS, however, although it assumes that pipelines will be used, does not commit the Department to specific routes or modes of transportation. Instead, the EIS contemplates that a more specific consideration of and commitment to routes and modes of transportation will occur once it has been determined where, if anywhere, oil or gas exists within the rather sizeable sale area (over 500,000 acres) and in what quantity and quality. The lessee of a tract where oil is discovered will be required, before beginning production and transportation, to present a development plan, including specific pipeline routes, that will be subject to the review and approval of both the Secretary and affected coastal states. The Secretary has announced that before considering whether to approve any such plans a Development Plan EIS will be prepared, which will include a survey of the environmental consequences and feasibility of specific pipeline corridors and of any other problems relating to specific proposals for the transportation of oil and gas actually found.

With this program for consideration of environmental consequences according to developmental stages in mind. the question upon this appeal is not whether the Sale 40 EIS failed completely to discuss the environmental risks involved in transporting oil to shore from the tracts under consideration for lease but whether a limited discussion, with the balance deferred until preparation of a Development Plan EIS, satisfies the "rule of reason" by which we are governed in determining whether there has been compliance with NEPA. In our view the answer, and the extent to which treatment of a subject in an EIS for a multistage project may be deferred, depends on two factors: (1) whether obtaining more detailed useful information on the topic of transportation is "meaningfully possible" at the time when the EIS for an earlier stage is prepared, see National Resources Defense Council v. Morton, 458 F.2d at 837, and (2) how important it is to have the additional information at an earlier stage in determining whether or not to proceed with the project, see Natural Resources Defense Council v. Callaway, 524 F.2d at 88.

If the additional information would at best amount to speculation as to future event or events, it obviously would not be of much use as input in deciding whether to proceed. As we said in Callaway, supra, referring to Morton, supra:

"NEPA does not require a 'crystal ball' inquiry. An EIS is required to furnish only such information as appears to be reasonably necessary under the circumstances for evaluation of the project rather than to be

so all-encompassing in scope that the task of preparing it would become either fruitless or well nigh impossible, *Indian Lookout Alliance* v. *Volpe*, 484 F.2d 11 (8th Cir. 1973). A government agency cannot be expected to wait until a perfect solution of environmental consequences of proposed action is devised before preparing and circulating an EIS." 524 F.2d at 88.

Where the major federal action under consideration, once authorized, cannot be modified or changed, it may be essential to obtain such information as is available, speculative or not, for whatever it may be worth in deciding whether to make the crystallized commitment (e.g., the construction of a bridge of a specified type between two precise points). But where a multistage project can be modified or changed in the future to minimize or eliminate environmental hazards disclosed as the result of information that will not become available until the future, and the Government reserves the power to make such a modification or change after the information is available and incorporated in a further EIS, it cannot be said that deferment violates the "rule of reason." Indeed, in considering a project of such flexibility, it might be both unwise and unfair not to postpone the decision regarding the next stage until more accurate data is at hand.

Applying these principles here, although it was possible to project hypothetical pipeline routes from various parts of the enormous Sale 40 area to points on shore, just as Shell Oil Company had done as part of a study of the economic feasibility of pipelining oil and gas from the area in preparation for bidding on the Sale 40 tracts, it is clear that such a procedure would not yield information of practical use to the Secretary for the purpose of determin-

ing what onshore zoning and environmental problems would be encountered. In effect the procedure would amount to a meaningless exercise, for several reasons. The placement of a pipeline depends on a number of vital factors just as important as compliance with local land use requirements -the size and location of the oil discovery, its distance from shore, the type of oil discovered, its final destination, and the ocean bottom. It is not known where, if at all, oil or gas will be discovered in the enormously far-flung Sale 40 area. Thus it is impossible to determine where in the field the pipelines would originate. Second, no comprehensive ocean bottom survey has been conducted of the vast region between the field and the coasts of New Jersey and Delaware; a determination of the best ocean bottom corridors would therefore also be entirely speculative. Third. under the Coastal Zone Management Act, 16 U.S.C. §§1451, et seq., the location of pipeline landfalls and onshore pipeline routes must conform to the Coastal Zone Management Act (CZMA) plans of the affected states. Until the relevant states finish drafting their CZMA plans, therefore, onshore pipeline routes cannot be determined. Finally, at the time the EIS was drafted it was not even known whether companies with refineries in New York, Baltimore, or Philadelphia would make successful bids. It is still not known which companies will find oil, nor is it known whether any oil found will be of a type that existing refineries can process. Thus it is not possible at this point to specify probable pipeline destinations. To require the EIS to specify such routes at this stage would be equal to demanding that the Department specify the probable route of a highway that may never be built from points as yet unknown to other points as yet unknown over terrain as yet uncharted in conformity with state plans as yet undrafted. A more speculative exercise can hardly be imagined. While speculation in an EIS is not precluded, the agency is not obliged to

⁴ See generally F. Anderson, NEPA in the Courts (1973) and sources cited therein.

engage in endless hypothesizing as to remote possibilities. There comes a point when the chain of "ifs" gets too long and too tenuous to be of any practical use. That point was reached here.

Moreover, even if "likely" pipeline routes could be projected and existing land use regulations affecting the proposed onshore routes could be analyzed, the information would be of little or no utility in determining the impact of state and local exercise of regulatory powers, since each of the states and municipalities affected could change its regulations from favorable to unfavorable, or vice versa, between the publication of the EIS and the date, some three years or more later (assuming discovery of oil and approval of the corridors by the Secretary), when applications might be made to local authorities for the necessary land use authorizations. It is extremely unlikely that in the meantime any state or municipalities would issue an advisory opinion or statement of intent based on projected landfalls or onshore routes that would be purely speculative in nature. The exercise of power over land use could not, therefore, be ascertained by any meaningful degree for some time to come.

Judge Weinstein's reliance on the testimony of Franklin Brunjes and the pipeline feasibility study made by him for Shell Oil Company, moreover, is misplaced. That study did not purport to project probable or "likely" pipeline routes. It merely hypothesized some lines from arbitrarily-selected points in the ocean to similar points on shore, in order to show that pipelines could be used economically over long and circuitous routes. It demonstrated that routes might be shifted as much as a dozen miles north or south without substantially altering the cost of pipelining oil to shore. As Brunjes conceded, in order to make his analysis he was forced to assume not only that oil would be discovered but such basic facts as the location of the dis-

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covery, the "timing, quantity, quality, destination, what the cost for various routes and modes of transportation are". He further agreed that changes could occur in some or all of these key variables which would materially change his estimates. Subject to these conditions, the study supports the EIS's assumption that pipelining would be economically feasible. But, for the reasons we have noted,

We also had to assume how it would be developed and what the decline rate would be on the production, generally the life of the field.

We also had to assume the quality of oil, whether it was pumpable or not, what its characteristics are.

We also had to assume there would be . . . a normal type off that could be processed by existing refineries in the Northeast area and particularly the Philadelphia area.

Pumped for purposes of transportation—and we assumed that on the right of way that wherever possible that existing corridors would be used.

In summary on this, what it tells us is that as the distance increases, as far as pipelines are concerned, and as the assumed volume drops off, that pipeline costs do increase and they do compare fairly close to tanker transportation. I think we looked at—in looking at lesser volumes, lower than 125 thousand barrels a day production rate, that tankers and pipelines became much closer. That is comparing the long route—comparing the short route to the tanker, even at low production rates, the pipelines are much less expensive.

⁵ The tenuousness of Mr. Brunjes' hypothesis is attested to by his testimony as follows:

Q. Would you state to the Court the basic criteria or assumptions under which the cost information is developed ?

A. To do a study . . . [o]ne has to assume oil will be found and also where the oil would be found.

Q. Let's see if I understand. What that means is that the cost figures that you put into testimony yesterday in your expert opinion, any one of those numbers could be wrong by 25 percent?

A. Right. They could vary one way or the other up to 25 percent. That's what we strive for.

a determination of the environmental impact of pipeline routes and of their conformity with land use controls requires specificity that is not possible at this stage, simply because the specific information is not available. Information of the type used by Mr. Brunjes, while useful for economic feasibility purposes, would be virtually useless speculation for environmental impact purposes. In fact, Mr. Brunjes himself testified that it was "very premature at this time to speculate as to an exact routing involved and who would participate, the exact destination".

Nor does it appear that such information as to pipeline routes was essential to enable the Secretary to make the necessary environmental assessment to proceed with this stage of the project, see Natural Resources Defense Council v. Callaway, supra, 524 F.2d at 88, since his decision does not preclude him from requiring in the future that pipeline routes be modified or altered or from imposing additional conditions and safeguards on pipelining that will in effect

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permit its use only if it is environmentally acceptable. Should oil be discovered and the information essential for pipeline-routing become available, any lessees discovering oil must present development plans to the Department, including proposed pipeline routes, for approval. Before making that decision the Secretary will prepare a Development Plan EIS that should furnish the detail needed to assess the environmental consequences of any decision with respect to routes. By that time, moreover, the Secretary will also have the benefit of federal-state-local programs developed under the Coastal Zone Management Act, 16 U.S.C. §1451 et seq., (CZMA), under which each affected coastal state, working in coordination with the federal government, prepares a coastal zone program defining areas authorized for various facilities, including pipelines, CZMA §304(5), 16 U.S.C. §1453(5), to which the offshore lessees must adhere. As Judge Weinstein acknowledged, "The states concerned with Sale No. 40 leasing have made substantial efforts to carry out the Management Act's purposes. They are in the advanced stages of the work." (Mem. Op. 8/13/76). The mid-Atlantic CZMA programs will be prepared and federally-approved long before any pipeline-siting and construction could occur as part of the development phase of lease Sale 40, so that the development plans submitted to the Secretary for approval will be required under \$307(c)(3) of CZMA to certify that they are consistent with the relevant states' programs, 16 U.S.C. §1456(c)(3). Indeed, New Jersey expects to submit its CZMA program for federal approval in 1977. In the mean-

⁶ In effect Mr. Brunjes confirmed that due to the hypothetical nature of the assumptions used in his study and the fact that state and local laws might be changed during the period of at least two years before pipelining and pipeline sites would be selected, it would be necessary to study the conditions later, testifying:

Q. What are the many conditions that you refer to which you say could seriously affect facets of the study and which have not yet been defined by state and Federal authorities?

A. One facet that occurs to me is possibly that you know, any local entity, a county, any state government, could adopt regulations or laws that would affect the routing of the pipeline.

Q. Are you able to tell us, then, what is meant here by facets of the study that have yet to be defined by Federal authorities?

A. I believe in general terms that there are laws, regulations that are in fairly constant state of evolvement, and while I am no expert in the area I believe that there are—like EPA regulations that are continually being reviewed and promulgated, and that one, you know, should not make any decision on until they get to the point or near the point of making the decision and then try to determine what all of the latest laws and regulations and likely regulations that would be involved that would affect the pipeline.

⁷ In its Final Memorandum opinion the district court quotes a statement by New Jersey Governor Brendan Byrne at Department of Interior hearings on Jan. 27, 1976, regarding the Sale 40 EIS as support for the court's conclusion that the federal government should have considered "likely" or specific pipeline routes and landfalls. On the contrary, Governor Byrne was in fact arguing that route and pipeline siting should be deferred until the federal and state governments could coordinate

time, under Department of Interior regulations, 30 CFR 250.34 as modified, OCS lessees must, 30 days before submitting their development plans to the U.S. Geological Survey, furnish detailed information to affected coastal states, (OCS Order No. 15, 41 F.R. No. 204, 10/20/76), and the governors of the affected states are then given 60 days after submission of a development plan to review and comment on it, and to delay approval until their objections are resolved. Each development plan, moreover, must be submitted at least six months in advance of the contemplated date for commencement of operations in order to allow time for adequate review by the affected states.

Appellees, relying on Union Oil Company v. Morton, 512 F.2d 743 (9th Cir. 1975), argue in effect that, while the Secretary may have some leeway to alter or influence the location of future pipeline routes, he is in effect boxed in by his current decision and that by authorizing the lease sale he has irrevocably committed himself to allowing transportation of any oil that may be discovered in economic quantities, even if it should turn out that the means to be used, whether tanker or pipeline, are not environmentally acceptable, because of land use, economic, technical or other reasons. Hence, they contend, the environmental problems raised by specific pipeline routes must be resolved now. We disagree.

Had the Secretary retained less power to regulate the transportation phase of the Sale 40 project, appellees'

coastal planning activities as envisaged by the CZMA, which is the procedure being followed by the Department, and contending that no such sites should be specified or assumed "without adequate consultation with State or local officials now engaged in developing a coastal management strategy and program pursuant to State and federal law" (Final Memorandum, p. 12). Confirming this approach the State of New Jersey later published "Interim Land Use and Density Guidelines of the Coastal Area of New Jersey," which states that "detailed site selection . . . would be premature at this time." (Ex. 225, p. 21).

arguments might have some merit. However, under \$5(a) (1) of the Outer Continental Shelf Lands Act, 43 U.S.C. \$1334(a)(1), the Secretary possesses full power to prescribe "such rules and regulations as may be necessary" to protect the environment from hazards posed by exploitation of the continental shelf. Although a lease may be formally cancellable only for violation of pre-existing regulations, 43 U.S.C. \$1334(b), \$5(a)(1) provides that "The Secretary may at any time prescribe and amend such rules and regulations . . . and, notwithstanding any other provisions herein, such rules and regulations shall apply to all operations conducted under a lease issued or maintained under the provisions of this subchapter" (emphasis supplied), and the Sale 40 leases provide that each lessee must in its OCS operations comply with the Secretary's regulations as they may be revised or supplemented to provide for prevention of waste, for conservation of the OCS and for protection of correlative rights therein. In any event, a willful violation of subsequently-issued regulations would constitute a misdemeanor, 43 U.S.C. §1334(a)(2), and could provide the basis for injunctive relief. A properlyadopted later regulation would have the force of law, the public interest in compliance would be persuasive in inducing the courts to grant relief, Virginian Ry. Co. v. System Federation No. 40, 300 U.S. 515, 552 (1937), and the government's control over the seabed and its threatened resources by virtue of the OCS Lands Act, 43 U.S.C. §1332(a), would give it standing to seek injunctive relief, see United States v. Ray, 423 F.2d 16, 22 (5th Cir. 1970).

Nor are the Secretary's powers with respect to pipeline routes limited by the provision in Stipulation No. 4 that no crude oil may be transported ashore by tankers if the laying of pipelines "is technically and economically feasible." As we read the stipulation the Secretary retains the power to require that environmentally safe pipelines

be used even if the use of tankers or more hazardous pipelines might be cheaper. Indeed, under Stipulation No. 4 of the lease the Secretary "specifically reserves the right to require that any pipeline to be used for transporting production from this lease to shore be placed in certain designated areas or corridors." Economic feasibility is not to be determined merely by comparing pipeline costs with tanker costs and deciding which would be more profitable for the lessees. Nor does the stipulation in any other way limit the power of the Secretary to mandate the use of an environmentally acceptable means of pipeline transportation if technically feasible.

Finally, appellees argue that in the event use of pipelines is not economically and technically feasible, the Secretary will nevertheless be required to permit transportation of the oil ashore, by tankers if necessary, citing Union Oil Company, supra. Should the Secretary determine that only pipelining is environmentally acceptable, however, even though economically and technically unfeasible at the moment, under §1334(a)(1) he retains ample authority to suspend operations until a technology is developed under which use of pipelines is economically and technically feasible. See 30 C.F.R. §250.12(c); Union Oil Company, 512 F.2d at 751-52.

We therefore conclude that projection of specific pipeline routes was neither "meaningfully possible," nor "reasonably necessary under the circumstances." The Secretary will be in a much better position to make a realistic and specific assessment of problems relating to specific routes when, assuming oil is discovered, the lessees submit development plans. At that time, after preparing and examining the Development Plan EIS he may modify or disapprove the pipeline routing for environmental reasons. We agree with the Fifth Circuit's conclusion, when faced with a similar contention:

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"This project is an easily divisible one. In this continuously controllable project, the fact that a tract may prove productive would not mandate that an unsound method of delivering that production be utilized. We are not unmindful of the rule that the sufficiency of an EIS must be determined without reference to possible future action. Today's statement, however, includes sufficient pre-statement analysis of possible environmental hazards from pipeline location, construction or leakage." Sierra Club v. Morton, 510 F.2d 813, 824 (5th Cir. 1975) (emphasis in original).

We therefore cannot agree with the district court that failure to project specific pipeline routes and to assess their conformity with existing land use regulations rendered the EIS fatally defective.

The Cost-Benefit Analysis Of The Sale 40 Project.

To aid the Secretary's decision on lease Sale 40, the Bureau of Land Management drafted, in addition to the Sale 40 EIS, a program decision option document (PDOD) outlining possible alternative courses of action for the Secretary's consideration. This PDOD was not merely a summary of the EIS, but included in addition a cost-benefit analysis of the Sale 40 project, most of which was not duplicated in the EIS. After reviewing both of these documents, the Secretary authorized the lease sale.

The district court found that "the economic costs and benefits of the planned action were seriously and grossly misrepresented or omitted" by the PDOD, due to underestimates of finding and pipeline costs and overestimates of peak production rates, resulting in an overstatement of the likelihood that pipelines would be used and in an inadequate balancing of economic benefits against environmental costs. (Final Mem. Dec. p. 58, 2/17/77).

The court based these conclusions entirely on the testimony of one George L. Donkin, an economist called by plaintiffs, whom the court found to be "completely reliable and credible," and on documentary evidence relied on by Donkin. Although professing not to make a "substantive review of the administrative decision," the district judge found the Secretary's balance of economic benefits against environmental costs to "be arbitrary and capricious and in violation of NEPA." (Fin. Mem. Dec. pp. 79-81, 2/17/77). We disagree. In our view, the Department of Interior made an adequate compilation of relevant information, analyzed it reasonably, and did not ignore pertinent data. The district court, on the other hand, by substituting its judgment and its appraisal of the evidence for that of the Department, exceeded the proper scope of judicial review.

Before getting to the cost-benefit data itself, it is important to define the role of the district court in reviewing this aspect of an EIS for the purpose of determining whether there has been compliance with NEPA. The district court does not sit as a super-agency empowered to substitute its scientific expertise or testimony presented to it de novo for the evidence received and considered by the agency which prepared the EIS. Environmental Defense Fund v. Froehlke, 368 F. Supp. 231, 240 (W.D. Mo. 1973), aff'd, 497 F.2d 1340 (8th Cir. 1974). The court's task is merely "to determine whether the EIS was compiled in objective good faith and whether the resulting statement would permit a decisionmaker to fully consider and balance the environmental factors." Sierra Club v. Morton, 510 F.2d at 819. "The court is not empowered to substitute its judgment for that of the agency." Scenic Hudson Preservation Conference v. FPC, 453 F.2d 463, 468 (2d Cir. 1971) cert. denied, 407 U.S. 926 (1972), quoting Citizens to Preserve Overton Park, Inc. v. Volpe, 401 U.S. 402, 416 (1971). This is particularly true when it comes to

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evaluating the factual conclusions of the EIS. If the agency's conclusions have a "substantial basis in fact," FPC v. Florida Power & Light Co., 404 U.S. 453, 463 (1972), and if the EIS has set forth responsible opposing scientific views, Committee for Nuclear Responsibility v. Seaborg, 463 F.2d 783 (D.C. Cir. 1971), it is not for the district court to resolve conflicting scientific options. Evidence-weighing must be left to the agency making the policy decision. See Udall v. Washington, Virginia and Maryland Coach Company, 398 F.2d 765, 769 (D.C. Cir. 1968), cert. den., 393 U.S. 1017 (1969). Were the court to invade that province, the judiciary rather than the agency would become the policy-maker. Any agency decision with which the court disagreed on the merits could then be nullified as "arbitrary" merely because the court, upon receiving additional evidence, chose to rely upon it or to give it greater weight than that considered by the Executive Branch.

The question before the district court was whether the authors of the EIS made an objectively adequate effort, judged in light of the "rule of reason," to compile and present all significant environmental factors and alternatives for the decision-maker's consideration. Where evidence presented to the preparing agency is ignored or otherwise inadequately dealt with, serious questions may arise about the adequacy of the authors' efforts to compile a complete statement.

All of this does not mean that the district court erred in considering the PDOD upon its review of the EIS or in receiving additional evidence, such as the testimony of Mr. Donkin and the FPC statistics upon which he relied. A nonadjudicatory, nonrulemaking agency decision is subject to "thorough, probing, in-depth review," Citizens to Preserve Overton Park v. Volpe, 401 U.S. 402, 415 (1971). Although review of deliberative memoranda reflecting an

agency's mental process (such as the PDOD) is usually frowned upon, see United States v. Morgan, 313 U.S. 409, 422 (1941); Montrose Chemical Corp. v. Train, 491 F.2d 63, 68 (D.C. Cir. 1974), in the absence of formal administrative findings they may be considered by the court to determine the reasons for the decision-maker's choice. See Overton Park, 401 U.S. 420; Camp v. Pitts, 411 U.S. 138 (1973); National Nutritional Foods Association v. Food & Drug Administration, 491 F.2d 1141, 1145 (2d Cir.), cert. den., 419 U.S. 874 (1974); Bradley v. Weinberger, 483 F.2d 410, 414 n.4 (1st Cir. 1973). Whatever may be the scope of immunity accorded to internal deliberative memoranda communicating views of agency personnel and summarizing information found elsewhere in the record, the PDOD here contained information germane to the decision and not duplicated elsewhere in the record.

As we stated in Chelsea Neighborhood Associations v. United States Postal Service, 516 F.2d 378, 386 (2d Cir. 1975), "NEPA, in effect, requires a broadly defined costbenefit analysis of major federal activities." The guidelines of the Council on Environmental Quality, 40 C.F.R. \$1500.8(a)(8) provide that "agencies that prepare costbenefit analyses of proposed actions should attach such analyses, or summaries thereof, to the environmental impact statement..." Here the Bureau of Land Management included its cost-benefit analysis in the PDOD and attached it to the EIS as recommended by \$1500.8(a)(8). It was not, therefore, immune from NEPA regiew.

Nor was the court obligated to restrict its review to the administrative record. Although the focus of judicial inquiry in the ordinary suit challenging nonadjudicatory, nonrulemaking agency action is whether, given the information available to the decision-maker at the time, his decision was arbitrary or capricious, and for this purpose "the focal point for judicial review should be the adminis-

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trative record already in existence, not some new record made initially in the reviewing court", Camp v. Pitts, 411 U.S. 138, 142 (1973), in NEPA cases, by contrast, a primary function of the court is to insure that the information available to the decision-maker includes an adequate discussion of environmental effects and alternatives, Natural Resources Defense Council, Inc. v. Callaway, 524 F.2d 79, 90-94 (2d Cir. 1975); Greene County Planning Board v. FPC, 455 F.2d 412, 419-20 (2d Cir. 1972), which can sometimes be determined only by looking outside the administrative record to see what the agency may have ignored.

A suit under NEPA challenges the adequacy of part of the administrative record itself—the EIS. Glaring sins of omission may be evident on the face of the statement, see, e.g., Chelsea Neighborhood Associations v. United States Postal Service, 516 F.2d 378 (2d Cir. 1975); Silva v. Lynn, 482 F.2d 1282, 1283 (1st Cir. 1973). Other defects may become apparent when the statement is compared with different parts of the administrative record. See, e.g., I-291 Why? Association v. Burns, 372 F. Supp. 223 (D. Conn. 1974), aff'd per curiam, 517 F.2d 1077 (2d Cir. 1975). Generally, however, allegations that an EIS has neglected to mention a serious environmental consequence, failed adequately to discuss some reasonable alternative, or otherwise swept "stubborn problems or serious criticism . . .

⁸ Compare Environmental Defense Fund, Inc. v. Ruckelshaus, 439 F.2d 584, 595-96 (D.C. Cir. 1971), with Bradley v. Weinberger, 483 F.2d 410, 413-15 (1st Cir. 1973), and Proietti v. Levi, 530 F.2d 836, 838 (9th Cir. 1976).

A district court should identify that evidence which it finds to be part of the administrative record, since the failure of an EIS to note problems or data elsewhere in the record may be probative of the extent to which the EIS has been compiled in objective good faith. What constitutes part of the administrative record may be very unclear in a NEPA case, where there is no formal factfinding process. At the very least, however, the record should include all relevant studies or data used or published by the agency compiling the statement.

under the rug," Silva v. Lynn, 482 F.2d at 1285, raise issues sufficiently important to permit the introduction of new evidence in the district court, including expert testimony with respect to technical matters, both in challenges to the sufficiency of an environmental impact statement and in suits attacking an agency determination that no such statement is necessary.

Nor can we accept appellants' contention that plaintiffs' failure to present the evidence to the Department in the first instance for incorporation into the EIS¹² barred its

consideration by the district court. To so hold would in effect shift the burden of insuring the adequacy of the EIS to environmental challengers, even though the primary and nondelegable responsibility for providing such an analysis lies with the agency. Greene County Planning Board v. FPC, 455 F.2d 412, 420 (2d Cir. 1972); Calvert Cliffs' Coordinating Committee, Inc. v. United States Atomic Energy Commission, 449 F.2d 1109, 1119 (D.C. Cir. 1971). Here, moreover, much of the disputed information is contained in the PDOD, which was not circulated along with the draft EIS at all and was not made available to plaintiffs until they obtained it by court order after the final EIS had been published. For these reasons we conclude that, while the failure of the plaintiffs to offer such evidence to the Department when comments on the EIS were solicited might cast reflections upon the probative significance of the belatedly-offered evidence, the district court properly admitted the testimony of Mr. Donkin and the data on which it was based. The evidence introduced for the first time in the district court, however, would be probative only insofar as it tended to show either that the agency's research or analysis was clearly inadequate or that the agency improperly failed to set forth opposing views widely shared in the relevant scientific community.

Applying these principles here, the evidence relied upon by the district court fell far short of demonstrating that the Department of Interior's cost-benefit comparison was unfounded or that it ignored any data. To begin with, the Donkin testimony consists primarily of opinions and estimates rather than hard facts. The opinions, moreover, were of necessity furnished without benefit of certain essential relevant facts as yet unknown (e.g., the existence, location, quantity and quality of oil and gas in the leased tracts). The proof, therefore, calls for application of the principle that "appropriate allowance for the inexactness of

¹⁰ See, e.g., National Resources Defense Council, Inc. v. Callaway, 389 F. Supp. 1263 passim (D. Conn. 1974), rev'd, 524 F.2d 79, 82, 94 n.14 (2d Cir. 1975); Cape Henry Bird Club v. Laird, 359 F. Supp. 404, 415-16 (W.D. Va. 1973), aff'd on opinion below, 484 F.2d 453 (4th Cir. 1973); Sierra Club v. Lynn, 502 F.2d 43, 51 (5th Cir. 1974), cert. denied, 421 U.S. 994, 422 U.S. 1049 (1975); Natural Resources Defense Fund, Inc. v. TVA. 367 F. Supp. 128, 133 (E.D. Tenn. 1973), aff'd on opinion below, 502 F.2d 852, 854 (6th Cir. 1974); Environmental Defense Fund v. TVA, 371 F. Supp. 1004, 1007-14 (E.D. Tenn. 1973), aff'd on opinion below, 492 F.2d 466, 468 (6th Cir. 1974); Sierra Club v. Froehlke, 534 F.2d 1289, 1291, 1295, 1303 (8th Cir. 1976); Iowa Citizens for Environmental Quality, Inc. v. Volpe, 487 F.2d 849, 850 (8th Cir. 1973); Cady V. Morton, 527 F.2d 786, 796 (9th Cir. 1975); Friends of the Earth v. Coleman, 513 F.2d 295, 300 & n.6 (9th Cir. 1975); Trout Unlimited v. Morton, 509 F.2d 1276, 1281, 1284 (9th Cir. 1974); Life of the Land v. Brinegar, 485 F.2d 460, 463, 469-73 (9th Cir. 1973), cert. denied, 416 U.S. 961 (1974); Sierra Club v. Stamm, 507 F.2d 788, 789 (10th Cir. 1974); Natural Resources Defense Council, Inc. v. Morton, 458 F.2d 827, 830 (D.C. Cir. 1972).

¹¹ See, e.g., Massachusetts Air Pollution & Noise Abatement Committee v. Brinegar, 499 F.2d 125, 126 (1st Cir. 1974); Conservation Society of Southern Vermont, Inc. v. Volpe, 343 F. Supp. 761, 763 (D. Vt. 1972), aff'd, 508 F.2d 927 (2d Cir. 1974), vacated on other grounds, 423 U.S. 809 (1975); Rucker v. Willis, 484 F.2d 158, 162 & n.6, 163 n.7 (4th Cir. 1973); Nucleus of Chicago Homeowners Association v. Lynn, 524 F.2d 225, 229, 231 (7th Cir. 1975), cert. denied, 424 U.S. 967 (1976); Minnesota Public Interest Research Group v. Buts, 358 F. Supp. 584 passim (D. Minn. 1973), aff'd, 498 F.2d 1314, 1322 (8th Cir. 1974) (en banc); Fund for Animals v. Friszel, 530 F.2d 982, 987 & n.11 (D.C. Cir. 1975).

¹² Most comments received by the Department were reprinted verbatim in Volume III of the EIS.

all predictive ventures" must be made, see Kleppe v. Sierra Club, 427 U.S. 390, 402-03 n.14 (1976).

In essence Mr. Donkin testified (1) on the basis of data from the FPC, Congressional hearings, and major oil companies, that the PDOD underestimated finding costs by as much as 168%, (2) on the basis of FPC statistics, that the PDOD and EIS underestimated per mile pipeline costs by 73%, (3) that, because of these errors in estimating finding and pipeline costs, the PDOD underestimated the total investment required, and (4) on the basis of industry statistics, that the PDOD overestimated peak production levels. However, the FPC data relied on by Donkin included items not necessarily classifiable as capital investment cost (e.g., exploratory overhead) and Donkin assumed that the Secretary's figures included such items as wages during pre-production activity whereas the EIS did not treat such items as capital investment costs. Thus the cost estimates relied upon by Donkin were not strictly comparable with those used by the Secretary. Moreover, the FPC statistics relating to pipeline costs involved a project to be constructed well after the time the EIS was drafted, which would require that due allowance be made for inflation in costs and revenues. Donkin admitted that in 1973 pipeline costs were only about \$485,000 per mile, and testified that by October 1976 the costs had risen 150%, which would imply a figure of about \$1,200,000. Although Donkin indicated that pipeline cost should be estimated at \$1,750,000 per mile,13 Mr. Brunjes, whose testimony Judge Weinstein credited "in full," testified that the Secretary of Interior's estimate of \$1 million per mile was reasonable. Thus, when viewed against the uncertain and changing nature of available estimates, the Department's estimate of \$1 million per

mile in late 1975 appears to have substantial evidentiary support and to be consistent with at least some of the evidence received by the district court. Finally, Donkin's estimate of peak production was based on an assumed field life of 27.08 to 30 years. Since the Department assumed a shorter 25-year field life based on OCS experience (and there was no evidence that this assumption was unreasonable), it is not surprising that the Department's peak production figures were high, since it envisioned getting the same amount of oil and gas out of the ground over a shorter period of time.

In short, none of the statistics submitted by plaintiffs tended to demonstrate any fault in the Department's factual analysis or that the analysis was not conducted in good faith. In crediting Donkin's conclusions over those of the Department's experts, Judge Weinstein substituted the court's judgment for that of the Department and its experts, exceeding the proper scope of judicial review. The district court's finding that the Department's cost-benefit analysis was not compiled in good faith was thus clearly erroneous.

Alternative of Separating Exploration of Tracts From Leasing For Oil and Gas Production.

The district court concluded that the EIS failed to comply with NEPA because it gave "no consideration" or "failed to adequately consider" the alternative of separating exploration of the tracts from production so that the government, either alone or through a joint venture, could first determine whether there was oil or gas in the area and

¹³ The \$1,750,000 per mile figure, moreover, was based on a submission to the FPC of a pipeline between offshore areas within a field, whereas the EIS \$1 million per mile figure was based on a field-to-shore pipeline.

Any such estimates of future pipeline costs must of necessity engage in various assumptions (which might be characterized as "crystal-balling") with respect to numerous variables (e.g., costs of on-site investigation, compliance with regulatory requirements, sea bottom conditions, terrain problems, etc.).

then offer the hydrocarbon-producing tracts for lease on terms that would provide greater government control over environmental impacts. However, the PEIS does in fact discuss at some length possible types of separate exploration and production, including "Special Limited Leasing" in such pioneer areas as the mid-Atlantic Sale 40 tracts, "Leases for Exploration Only," "Federal Exploratory Drilling Program," "Federally Conducted Off-Structure Stratigraphic Drilling" and "Privately Conducted" off-structure drilling.

The "Alternatives" section of the EIS, moreover, reviews the possibility of government exploratory drilling prior to leasing, pointing out that, while this procedure would give the government detailed data upon which to base resource estimates and evaluate tracts before leasing. there would be a heavy strain on personnel, on procedures for contracting and hiring, and on the federal budget. It estimates that 60 or more exploratory wells might be required at a cost of \$4 million to \$7 million each, with the government taking the discovery risk, whereas leasing for exploration and sale would yield a substantial bonus to the government (over \$1 billion). It also points out that no oil has yet been discovered in the Destin Dome, which was the subject of the government's MAFLA lease sale, for which it received \$1 billion in advance bonus payment, thus confirming the precariousness of the government's entry into the exploration business.

In addition to consideration of the separate exploration alternative in the PEIS and EIS, the Department in March 1975 prepared for the Secretary's consideration a working paper, "Government Exploration of the OCS", and in June 1975 a "Position Paper on Separating of Decisions to Explore and to Develop OCS Area." These papers led to the Secretary's decision in August 1975 to amend OCS regulations to require a pause between exploration and develop-

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ment in order to provide coastal states with resulting data for use in considering development plans submitted by OCS lessees for approval.

Although faced with this extensive consideration by the Secretary of separate exploration-production alternatives, the district court nonetheless brushed the data aside as too brief, as "mere window dressing," and as offering reasons for rejection with which the court disagreed (e.g., that a federal exploration program would place too much risk on the federal government; that budgetary and manpower demands on the federal government would be too high; that such a leasing procedure would violate the Outer Continental Shelf Lands Act of 1953). This was clear error. Here again the district court appears to have misconceived its role and allowed its concept of the substantive merits of the issues to dominate its limited reviewing role, which is impermissible, see Scenic Hudson Conference v. Federal Power Commission, 453 F.2d 463, 468 (2d Cir. 1971), cert. denied, 407 U.S. 926 (1972).

The grounds for the Secretary's rejection of the alternative of separate government exploration were well within the range of reasonableness, particularly since the adoption of this alternative, in addition to its other disadvantages, would require legislation by Congress to amend the OCS Lands Act, §8(b) of which, 43 U.S.C. §1337(b), mandates that the lessee be granted the right to explore for and produce any oil discovered in paying quantities. See Gulf Oil Co. v. Morton, 493 F.2d 141, 145 (9th Cir. 1973); Union Oil Co. v. Morton, 512 F.2d 743 (9th Cir. 1975). Although an alternative may not necessarily be exempt from EIS consideration merely because it cannot be put into effect without legislation, this factor weighs heavily against its being explored at length, in view of the practical handicaps involved. See NRDC v. Callaway, 524 F.2d at 93.

Nor do we find any substantial support for the district

court's decision in the testimony of Ms. Judith Gresham, an employee of the New York office of the Bureau of Land Management of Interior, upon which the court so heavily relied. She testified that during the period when Interior was selecting and identifying tracts to be offered as lease Sale 40, which was prior to Interior's making of the lease proposal and its preparation of the EIS in connection with that proposal, the alternative of separation of exploration and production was not discussed by the New York office. Aside from the fact that consideration of such an alternative was not apparently part of her duties, it would in any event have been premature, since lease Sale 40 had not vet emerged as a proposal and no EIS had as yet been prepared in connection with lease Sale 40. It is elementary that the EIS, including its review of alternatives, need not be prepared and considered until the time when the agency publishes a proposal and holds hearings on the proposal. Aberdeen & Rockfish Railroad Co. v. SCRAP (SCRAP II) 422 U.S. 289, 320 (1975).

The Possibility of Leasing Tracts Other Than Those Selected For Lease Sale 40.

The district court further found the EIS inadequate for the reason that in considering the impact of tracts selected for lease Sale 40 the Secretary failed to consider the alternative of "excluding industry-preferred tracts, or including less highly desired tracts in the final sale offer because of related onshore impacts and developments." The district court reasoned that if a tract believed less likely to have hydrocarbons in it than those selected were located "contiguous to potentially acceptable pipeline landfalls" (which erroneously assumes that such corridors of landfalls have been determined), the Secretary had a duty to consider selecting such a tract in lieu of others selected for lease.

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The criticism ignores the logical procedure which was followed by the Department of Interior. In deciding what publicly-owned areas should be made available for oil and gas exploration the first step taken by the Department was to identify those sites which were reasonably believed on the basis of geological and other data to have a potential hydrocarbon content. It then sought to find out whether qualified lessees might be willing to explore any of them by asking for tract nominations. Then, armed with knowledge of what was within the realm of the possible, the Department examined the 557 tracts nominated by private industry for possible lease and, after considering some sixteen environmental criteria, eliminated all but 154 tracts, which became the subject of the Sale 40 proposal and of the EIS then repared. In addition to considering the onshore impact of these tragts, the EIS dealt at length with the alternative of deleting still more tracts from the proposal or "substituting tracts within the call for nominations," so that the leased area would be smaller or in a somewhat different location in the mid-Atlantic.

In our view this procedure was reasonable and gave proper consideration to alternatives of the type suggested by the district court. Moreover, it is significant that, although the states and localities that might be most affected onshore by the proposal offered various comments with respect to it, none suggested that other tracts should have been substituted for those offered, much less that tracts should have been selected initially on the basis of possible onshore environmental impacts rather than potential hydrocarbon content. The district court's criticism in this regard appears to be unrealistic since, as actual experience in the tract selection process demonstrates, it ignores the strong probability that nobody would have bid on less desirable tracts if they had been substituted. Indeed, as it was, bids were submitted on only 101 of the 154

tracts offered by the Department for lease and the Department accepted bids on 93 of the 101 tracts. The evidence was clear, as Ms. Gresham testified, that there was a "non-existent" interest in leasing tracts of the type suggested sua sponte by the district court because there was an insufficient indication of the existence of hydrocarbons in those tracts.

The Claims of Lack of Good Faith on the Part of the Secretary of Interior

In August, 1976, at the conclusion of the hearing on plaintiff's application for preliminary injunctive relief, the district court found, in response to claims of bad faith on the part of the Secretary, that "on balance, the court has not been convinced that the Secretary and his subordinates did not attempt to execute NEPA honestly." (Memo. opin. p. 32-33, 8/13/76). Following our reversal of preliminary relief, no substantial additional evidence was introduced on the subject of the Secretary's good faith. Indeed, that matter was not listed by the trial judge among the issues to be discussed in post-trial briefs. Nevertheless, the court's final opinion concludes that there was persuasive evidence that the Secretary's decision to proceed with Sale 40 was made 'long before the ostensible decision dates, and before fulfillment of NEPA's requirements, and that the Bureau of Land Management simply went through the NEPA motions in order to validate the decisions previously made," and "that the Department of Interior had little interest in properly fulfilling its obligations under NEPA." These statements were presumably based on the same evidence the court had examined before its original contrary finding in which it concluded:

It must be recognized that both the accelerated program and Sale No. 40 involve significant political

considerations of widespread interest. As a result, it is not realistic to assume that discussion and debate among high public officials and decisionmakers will not take place prior to a final decision. The fact that this dialogue precedes the decision and was engaged in by the eventual decisionmaker does not, as plaintiffs assert, indicate that the Secretary cannot consider the environmental data presented him with good faith objectivity.

The only additional evidence bearing on the Secretary's good faith offered at trial was the testimony of one witness that he had been advised in 1965 by the "people" in the Department of Interior that they were "planning on about a 1970 sale in the Atlantic." However, this conversation, which occurred four years before NEPA was passed, was hardly probative on the question of compliance. The district court's about-face on this issue was not its only change made without any new evidentiary support. With respect to the EIS in general it originally concluded:

But, on balance, the impartial reader of the EIS is driven to the conclusion that, within the limit of reasonable researchers and writers, a studied effort was made to present a fairly grim picture of possible environmental difficulties. If anything, the studies are almost too detailed and encyclopedic for a lay executive to fully comprehend. The Final EIS Sale No. 40, together with the PDOD prepared by staff to summarize and clarify the issue for decision, satisfactorily meets both the spirit and the letter of NEPA requirements in all respects except one, addressed below.

Although the district court based its decision on grounds other than bad faith, we nevertheless feel compelled to advert to this unfortunate discussion, not only because of

the possibility that the court might otherwise be inclined to resurrect it but because of the needless damage it inflicts on government servants. As it is, a government policymaker is placed by NEPA in a difficult enough posture with respect to controversial federal programs of the type under review. On the one hand, in response to public pressure to find means of satisfying our ever-increasing and widespread national energy needs, he is expected to originate and consider proposals for exploitation of our natural resources. On the other, he is obligated by NEPA to proceed with such proposals only when, in his honest judgment and after full detailed study and balancing of all relevant factors, he concludes that the project is worth the environmental cost. Although the task might be lightened by placing the burden of making the final decision elsewhere-such a procedure conceivably could lead to more objective resolution of the conflict, see Note, The Least Adverse Alternative Approach to Substantive Review under NEPA, 88 Harv. L. Rev. 735, 737, 739-40 (1975) -under present law it continues to rest on the same person's shoulders, undoubtedly in part because he and his subordinates are more familiar with all of the relevant facts and circumstances than anyone else in government.

There is always the risk that a government official who originates a project may be too partial toward it to be completely objective in weighing environmental objections to it. However, to suggest that because he originated it before exposing it to NEPA review the latter was a "charade" and the outcome a "foregone conclusion" is not only unnecessary but does a disservice in the absence of supporting proof. Here we fail to find such proof. The various statements of federal officials from the President on down taken out of context by the district court, in which they emphasize the importance of going forward with

leasing of the OCS for oil and gas exploration, were made on the understanding that the proposal was subject to thorough environmental analysis and compliance with NEPA. As the EIS states—(Vol. I, p. 34) with reference to the OCS planning schedule first proposed in November, 1974, and modified in 1975:

This proposed OCS planning schedule does not represent a decision to lease in any of these particular areas. It represents only the Department's intent to consider leasing in such areas and to proceed with the leasing development of such areas if it should be determined that leasing and development in such areas would be environmentally, technically, and economically acceptable.

CONGLUSION:

The district court appears to have allowed its views regarding the substance of the Secretary's proposal to becloud its understanding of its reviewing function and its analysis of the Sale 40 EIS for adequacy, leading to the court's unfortunate characterization of the Secretary's motives, its substitution of testimony received by it for that considered by the Secretary, and its adoption sua sponte of grounds for inadequacy that were not suggested by the parties. Were the major federal action at issue one that irrevocably committed specific public resources to irreversible damage from the outset, see e.g., NRDC v. Callaway, 524 F.2d 79 (2nd Cir. 1975) (ocean dumping site), rather than one subject to substantial modification by the government to satisfy environmental objections as it progresses we, like the district court, might be troubled by the apparent failure of the EIS, despite its length, to deal as thoroughly with some environmental consequences

of transportation as might be hoped.¹⁶ Since our questions pertain to the transportation stage and the multistage project is environmentally divisible, we place them in the same category as those of concern to the district court.

- (1) In assessing the risk of oil spills at drilling sites and through pipeline accidents the EIS relies almost entirely on spill data from Gulf of Mexico offshore operations, which are represented to provide the most complete tabulation of information on the subject. However, the EIS, unlike the PEIS, fails to take into account the probability that in the pioneer mid-Atlantic area greater spill risks are presented because of heavier weather and rougher seas (witness the recent North Sea blow-out). In contrast to the EIS, the PEIS multiplied the Gulf of Mexico statistics by a risk factor in order to account for the added risk faged in the Atlantic. Moreover, in discussing blow-outs the EIS, using statistics dating back to 1970, does not include the Santa Barbara disaster, which occurred in 1969.
- (2) Models for determining the possible impact of spills were apparently limited to tests made on the basis of surface currents without considering bottom currents and the risk that they would lead to heavy onshore tar residue deposits.
- (3) A key chart in the EIS (Table III-23, Vol. II, page 91) estimates that there is only a 39% chance that during the 25-year life of the Sale 40 operations one spill of greater than 1,000 barrels will go ashore and a 90% chance that one spill of 50 to 1,000 barrels will go ashore. However, the percentages are based on a study of oil spill trajectories originating at the drill sites 45 to 100 miles offshore, whereas available data indicates that 67.62% of all oil spilled in the Gulf of Mexico since 1967 has come from pipelines, which are located nearer to shore than the drilling sites. Moreover, other oil spills occur closer to shore as the result of tanker accidents and the like.
- (4) Although the EIS assumes that the pipelines will be buried it fails to discuss, in using Gulf of Mexico data, (1) whether the pipelines there are also buried, (2) whether ocean "scour" in the mid-Atlantic would expose buried pipelines in some areas, and (3) whether it may be impossible to bury pipelines in other large areas of the ocean bottom, such as the gravel area off Monmouth County. Accepting the fact that 92.31% of all pipeline accidents are caused by ships dragging anchors across the pipelines, the EIS fails to compare shipping and particularly fishing trawler traffic in the mid-Atlantic with the Gulf, thus putting into question the applicability of the Gulf statistics to the mid-Atlantic area.
- (5) No effort appears to be made to furnish statistics as to the present tanker spillage in the area offshore that could possibly be

We are satisfied that the Department of Interior, which will have continuous control over the venture, will deal with them thoroughly in the Development Plan EIS before approving any plans for transportation of such oil as may be discovered in the Sale 40 area and after the Department has the essential information regarding the location, quantity and quality of any discovered oil, an ocean bottom survey, and the Coastal Zone Management Act programs that will have been enacted.

The decision of the district court is reversed, the injunction is vacated and the cases are remanded with direction to dismiss the consolidated complaints.

used to transport oil from the mid-Atlantic to onshore refineries if pipelining became unfeasible, much less to explain whether tankwashing (which accounts for 85% of present worldwide tanker spillage) and bilge bunkering would occur in the area between the Sale 40 field and shore. Worldwide tanker spill statistics, although stated, are deemed inapplicable without explanation. The probable consequences of using smaller tankers in lieu of the larger international types are not explained.

¹⁵ The following are a few examples of questions raised by the EIS:

APPENDIX B

District Court's Opinion, February 17, 1977.

UNITED STATES DISTRICT COURT EASTERN DISTRICT OF NEW YORK

FINAL MEMORANDUM AND ORDER

75 C 208

County of Suffolk, et al.,

Plaintiffs,

against

SECRETARY OF THE INTERIOR, et al.,

Defendants,

NATIONAL OCEAN INDUSTRIES Association, et al., Intervenor-Defendants.

76 C 1229

THE NATURAL RESOURCES DEFENSE COUNCIL, INC.,

Plaintiff,

against

SECRETARY OF THE INTERIOR,

Defendant.

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Weinstein, District Judge:

After extensive hearings held in July and August of 1976 this court determined that the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321 et seq., required issuance of a preliminary injunction preventing the Secretary of the Interior from proceeding with Lease Sale Number 40 of outer continental shelf lands in the mid Atlantic region for exploration and production of oil and gas. The text of the memorandum filed by this court on August 13, 1976 as a result of those preliminary hearings is reaffirmed and deemed incorporated as part of this memorandum and final order following final hearings. For reasons set forth in the two memoranda, the court has concluded that the Secretary of the Interior has violated NEPA and that Sale 40 leases are void. While the preliminary memorandum indicated, on the basis of a preliminary hearing, only one ground for declaring NEPA violated, the final hearings revealed that NEPA had been violated in a number of respects, as indicated below.

The issue before this court is not the wisdom or desirability of this country's total "energy program," or of any of its specific aspects. It is not this court's function to pass on the substantive merits of the Sale 40 lease project. either in its present or potentially modified form. It is. rather, concerned with whether the Secretary of the Interior, in reaching his decision to lease these lands, complied with the statutory requirements governing his responsibilities as trustee and administrator of the public resources of the outer continental shelf; specifically, the question posed is whether his decision was fully and accurately informed and made after adequate consideration of viable alternative programs and potential adverse environmental impacts.

Our preliminary finding, as outlined in this court's opinion of August 13, 1976, was that the Secretary had not met

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his NEPA responsibilities. In deciding to proceed with Sale 40 in its present configuration he virtually ignored the power of states and their political subdivisions to regulate the siting, construction and use of nearshore and onshore facilities through measures such as special land-use laws, air and water pollution laws, pipeline regulations

and zoning and building codes.

We noted that if the states or municipalities bordering the Sale 40 area prevented pipelines from drilling sites from crossing their shores—as they have the power to dothen the only alternative for transporting oil would be by tankers or longer pipelines. Evidence indicated that state or municipal decisions banning pipelines or ordering their special routing were probable given the substantial impact that construction of a pipeline, or oil spillage from it, would have on coastal lands.

We found that the Final Environmental Statement for Sale No. 40 contained no meaningful discussion and reflected no real awareness of the fact that state and municipal action may severely restrict pipelines and related onshore facilities, and that without an analysis of these state and local provisions and the probable extent of state and municipal cooperation or opposition a realistic appraisal of the impact of Sale 40 on the environment was not possible.

We also noted that the Sale 40 Program Decision Option Document assumed that pipelines will be used. It was relied upon by the Secretary in making his decision to lease, and assumes the use of pipelines as both economically and technically feasible in case of a large oil discovery.

We concluded that if the assumption by the Secretary that pipelines will transport the oil in case of a large strike might have been different if the state situation had been brought home to him in a meaningful way, then the NEPA decision making process was invalid.

Accordingly, a preliminary injunction preventing Lease Sale 40 was granted pending further hearings and decision on applications for a permanent injunction. On August 16, 1976 the Court of Appeals for the Second Circuit stayed the order of this court; on October 14, 1976 it held that plaintiffs had not demonstrated that they would suffer irreparable harm between the date of the preliminary hearing and the trial, and that there was some question whether plaintiffs would succeed on the merits at the trial.

The parties were advised that, by proceeding with leasing prior to a final determination, they assumed the risk of an ultimate adverse decision. Justice Marshall, in declining to overturn the Court of Appeals' stay of the preliminary injunction, focused on the extremely narrow grounds for the stay, making clear that invalidation of any resultant leases was a very real possibility should plaintiffs prevail on the merits.

The Court of Appeals concluded that plaintiffs would not be irreparably injured if the Secretary were permitted to open the bids. I cannot say that the court abused its discretion. It is axiomatic that if the Government, without preparing an adequate impact statement, were to make an 'irreversible commitment of resources,' Natural Resources Defense Council v. NRC, 539 F.2d 824 at 844 (2 Cir. 1976), a citizen's right to have environmental factors taken into account by the decisionmaker would be irreparably impaired. For this reason, the lower courts repeatedly have enjoined the Government from making such resource commitments without first preparing adequate impact statements. Indeed this past Term, in Kleppe v. Sierra Club, . . . we indicated that it would have been appropriate for the Court of Appeals to have enjoined the approval of mining plans had that court concluded that 'the impact statement covering [the mining plans] in-

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adequately analyzed the environmental impacts of, and the alternatives to, their approval.' — U.S., at — n. 16, 96 S.Ct., at 2729.

In the instant case, however, the Court of Appeals apparently decided that the opening of bids does not constitute an 'irreversible commitment of resources.' I am unprepared to say that the court was wrong in so holding. In the first instance, it is quite clear that the actual opening of the bids does not involve a commitment of any kind, since the Secretary reserves the right to reject all bids. Thus it is not until a bid is accepted—which may not happen for 30 days—that an irreversible commitment is even arguably made. Moreover, even after the bids are accepted, I cannot say that the Court of Appeals would be without power to declare the leases invalid if the court determined that the Government entered into leases without compliance with the requirements of NEPA.

N.Y., Natural Resources Defense Council, Inc. v. Kleppe, — U.S. —, —, 97 S.Ct. 4, 7 (1976) (footnotes omitted; emphasis added).

The Secretary of the Interior proceeded to lease a total of 93 tracts in the Sale 40 area. He accepted bids totalling over 1.1 billion dollars. The successful bidders have begun to take preliminary steps required for full exploitation of their leaseholds.

After further pre-trial hearings and discovery, a final hearing was held at which all parties introduced extensive additional proof. The resulting twelve hundred pages of new testimony and numerous documents serve to confirm and expand the bases of the court's earlier tentative conclusion that NEPA has been violated. In all a total of 4,043 pages of testimony were taken, 32 witnesses were heard, 273 documents were received and the affidavits and proffers of proof for a substantial number of other per-

sons considered. Set forth as appendices "A", "B" and "C" to this opinion for the assistance of the appellate courts are lists of witnesses and exhibits considered by the court.

I. Summary of Findings

We find that the Secretary 1) ignored the practical effects of local governmental licensing, permitting and review powers in the NEPA documents; 2) failed to consider the environmental impact of specific probable pipeline routes from the outer continental shelf, in spite of the fact that projection of such routes is routinely made by industry and could have been made by the Secretary or his agents; 3) greatly overstated peak oil and gas production for Sale 40 and significantly understated the cost of such production, including pipeline construction; this resulted in a serious lack of consideration of the likelihood and attendant dangers of increased tanker traffic and an overestimate of the net value of the entire project; 4) failed to consider the possible impact of particular tract selection choices on the feasibility and sites of pipelines; there was no consideration of the alternatives of either excluding industry-preferred tracts, or including less highly desired tracts in the final sale offer because of related onshore impacts and developments; and 5) failed to consider the alternative of separating exploration from production leasing. Adequate consideration of these factors might have led to modifications in the Sale 40 leasing program, resulting in greater environmental protection without impairing reasonable exploitation of offshore hydrocarbon resources.

While there was substantial evidence that the Secretary's decision was not based upon a good faith consideration of relevant NEPA documents, but on decisions made privately and in advance of public hearings, we find it unnecessary

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to make any such finding. It is enough for purposes of this proceeding to detail the abstract and misleading aspects of the operative NEPA documents that prevented any realistic appraisal of either environmental dangers or the practical advantages and disadvantages that would result from the specific Sale 40 leases. Each of the inadequacies, considered below in detail, constitutes a violation of both the letter and spirit of NEPA and requires rescission of the Secretary's leasing decision.

II. NEPA Violations

A. Failure to Consider Impact of State and Local Exercise of Regulatory Powers

As we noted earlier, evidence adduced at the final hearings strongly reinforced the preliminary conclusion of the court that the powers of state and municipal authorities to affect the scope of outer continental shelf operations were virtually ignored in deciding to proceed with Lease Sale 40 in its present form. This failure is particularly striking in light of the fact that there are hundreds of political subdivisions with varying degrees of jurisdiction over various aspects of Sale 40 related development.

In Counties of Nassau and Suffolk alone, the following municipalities, bordering the Atlantic, may be harmed by oil spills:

Village of Atlantic Beach
City of Long Beach
Village of Lawrence
Village of Woodbury
Village of Hewlett Neck
Village of Hewlett Harbor
Village of Island Park
Village of Freeport
Town of Hempstead

Town of Oyster Bay Town of Babylon Village of Amityville Village of Lindenhurst Village of Babylon Town of Islip Village of Brightwaters Village of Saltaire Village of Ocean Beach Town of Brookhaven Village of Patchogue Village of Bellport Town of Southampton Village of Westhampton Beach Village of Quogue Village of Southhampton Town of Easthampton Village of Easthampton

And in Cape May County, New Jersey, which is a prime potential site for pipeline placement from the Sale 40 area, the following municipalities possess zoning ordinances which may be used to restrict the placement of pipelines within their jurisdiction:

Avalon	Sea Isle City
Cape May City	Stone Harbor
Cape May Point	Upper Township
Dennis Township	West Cape May
Lower Township	West Wildwood
Middle Township	Wildwood
North Wildwood	Wildwood Crest
Ocean City	Woodbine

When the six states and many cities and other municipalities bordering the estuaries, bays, sounds and ocean are considered, the number of authorities with power to

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affect the operation multiplies into the hundreds. But the powers of these and other concerned municipalities were virtually ignored in the relevant NEPA documents.

This lack of consideration of the need for coordination of zoning and other actions required for reasonable exploitation of the potential oil and gas production resource cannot be attributed to absence of interest or effort on the part of those responsible for state and local coastal planning activities. They have not been mute. On January 27, 1976, for example, New Jersey's Governor Brendan Byrne personally addressed a Department of Interior panel conducting hearings in Atlantic City on the Draft Environmental Statement for Sale 40. One of the four issues he raised illustrates the central problem. On the question of the State of New Jersey's right to manage its coastal areas, Governor Byrne stated:

[T]he environmental statement's assumptions concerning the siting of onshore facilities have not been coordinated with State or local coastal planning activities or concerns.

The environmental statement and its accompanying technical paper identify certain locations as possible sites for onshore facilities. In New Jersey, again depending on the uncertain range of potential production, the statement assumes that areas in Atlantic, Cape May, Ocean and Monmouth Counties may be sites for onshore operations bases or pipeline terminals. Yet these assumed sites have been designated without adequate consultation with State or local officials now engaged in developing a coastal management strategy and program pursuant to State and federal law. The designations ignore local concerns and interests. As I am sure local officials will confirm during these hearings, Cape May County has minimal industrial development, and is highly dependent upon a re-

sort economy. There is a strong argument that the continued vitality of this county is totally incompatible with OCS development; to a somewhat lesser extent these concerns are also shared by Atlantic, Ocean and Monmouth Counties, which are also heavily dependent upon the tourist industry. It is indeed possible that New Jersey will decide that areas like Long Branch and Cape May should be spared all impacts of OCS developments in favor of such already industrialized areas as Camden, Port Newark, Bayonne and Linden. The important point is that in the drafting of the environmental statement there has been no attempt to either consider New Jersey's current thinking on its coastal planning, or to consider what the environmental and economic impacts would be on the OCS program if New Jersey bars onshore OCS facilities from those locations which are assumed to be likely sites in the environmental statement.

Statement of Governor Brendan T. Byrne at the Department of the Interior's Hearings on the Proposed Mid-Atlantic Oil and Gas Lease Sale, Atlantic City, New Jersey, January 27, 1976 (emphasis added).

1. Effect of Coastal Zone Management Plans

Defendants have relied heavily on the contention that these various states and localities have been, and will be, able to protect their coastal areas and environment from the effects of an incomplete impact statement by developing coastal zone management plans in accordance with the Federal Coastal Zone Management Act, 16 U.S.C. \$\forall 1451 et seq. (CZMA), using funds supplied by the federal government. The argument that this activity is a substitute for the government's responsibilities under NEPA is unpersuasive. First, NEPA requires an independent assessment of a variety of facts to determine

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possible environmental damage. That responsibility cannot be fobbed off to the states under a different program. Second, the extensive work being done on the various state plans will not be completed until 1978 at the earliest. Third, the critical amendments to the CZMA relied upon by defendants were adopted after the Final Environmental Statement Sale 40 was published and the Secretary of the Interior made his decision to lease; these amendments could have had no impact on his decisions under NEPA.

Certainly the federal authorities were not required to wait until these CZMA plans were completed, although it might have been desirable to put off a decision until a more rational, fully informed decision could be made. But the work described at the hearings suggests the importance of the state plans and programs in connection with the exploitation by the federal government of the off-shore resources in a way that will minimize environmental impact. Furthermore, evidence of the complexity of the task of achieving state coordinated programs that will meld various local views suggests the critical importance of considering local zoning and planning powers in determining the environmental issue under NEPA.

Evidence, which could have been brought to the Secretary's attention by the NEPA documents, demonstrates that these local governmental powers can and will be utilized to prevent landing of outer continental shelf oil over wide portions of the coast line, whether that landing is by tanker or pipeline. Failure to include an evaluation of such local opposition to pipelines or tanker-related onshore facilities necessarily resulted in a failure to gain a full and meaningful perspective on the intrinsic environmental problems related to offshore oil and gas exploration.

2. Recognition of State and Local Powers in NEPA Documents

In attempting to demonstrate that the Secretary gave adequate consideration to state and local powers to affect outer continental shelf activities, defendants, in their extensive post-trial memoranda, marshal numerous references in the Final Environmental Statement to such powers. In order to understand the true significance of the references, the most significant passages are reproduced below. In context, they demonstrate a listing in abstract form, without any attempt to evaluate their practical effect on specific oil and gas production and delivery systems from specific areas offshore to specific affected areas onshore.

[T]he types of development permitted in the coastal zone, including any that might be associated with offshore oil and gas operations in the event this proposed sale is held, can ultimately be broadly controlled by the States.

Sale 40 FES, Vol. 1, p. 40.

Siting of [OCS-related facilities] in a coastal area in Maryland, New Jersey, and Delaware (where all primary facility development is anticipated to occur) would be subject to state approval as well, and the interests of local communities might be taken into consideration by the state. In New York and Virginia, where no coastal area facility siting regulations exist at the state level, siting decisions might be made which would adversely affect an adjoining jurisdiction through secondary impacts or because the facility might be inconsistent with neighboring land use.

Id., Vol. 2, p. 284.

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The general location of many of the facilities which would be required onshore as a result of the proposed sale would be a function of where pipelines are allowed to come ashore. As pipelines locations within the states' three mile limit offshore, as well as onshore, would be a matter of state jurisdiction, the general location of these OCS-related activities could be directed by state actions, in addition to specific siting control which would be exercised by state and/or local controls.

Id. at p. 290.

New Jersey and Maryland have legislation that would require permitting and appropriate environmental analyses for proposed pipelines in legislatively designated portions of the coastal zone. Although local plans may be formulated that identify desirable utility corridors, rarely do zoning plans restrict pipelines to predetermined locations. Local ordinances may, however, prescribe procedures for obtaining local review and approval of proposed pipelines. Direct federal responsibility for the siting of onshore facilities is limited except for federally administered lands. . . . State and local planning and regulatory authorities provide the primary framework within which potential adverse effects of the onshore facilities can be addressed.

Id. at p. 456 (footnotes omitted).

[W]here the plans involve onshore facilities, such as pipeline landing sites and onshore support facilities, the ultimate approval . . . would be within the jurisdiction of the State.

Id. at p. 586.

[S]ince State and local jurisdictions would have to permit both onshore sections of pipelines and pipe-

lines in State waters, pipeline landfalls in areas where they would cause great environmental impact are not likely.

Id., Vol. 3, p. 32.

The Department of the Interior has no authority by statute regarding the planning and siting of onshore OCS-related facilities. The States, counties, and local municipalities are responsible for enforcing their own statutes, regulations, and zoning and permitting powers. . . . [The filing of OCS development plans with the States] will provide the States with more detail regarding offshore resources and onshore facilities that will be needed in order that the States can better plan and coordinate the industry needs with all their State, county, and local authorities.

Id. at p. 64.

Factors which could hinder or prohibit the use of pipelines in this Mid-Atlantic area might include the following:

(3) receptivity of State and local jurisdictions along Mid-Atlantic coast to the approval of pipeline landfalls that would be needed.

Id., Vol. 2, p. 20, n. 1.

These and other references succeed in establishing beyond question that the Secretary should have known of the existence of some vague state and local zoning and permitting powers. But there was never any doubt in the court's mind that the Secretary had such unspecific knowledge; any suggestion to the contrary would have had to assume a total ignorance on his part of our federal system.

Nor was there any doubt that the NEPA documents made reference generally to the formal state and local

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powers and procedural requirements in this area, although it hardly requires an environmental impact statement to disclose the existence of some sort of regulatory powers; it is surely elementary knowledge to anyone involved in major federal or industry projects.

But passing references to, and abstract listings of, state and local authority is only the beginning and not the end of the NEPA required inquiry. The next, and by far more crucial step is a projection of the site-specific, pragmatic, empirical effects of the likely exercise of such power. It is the *impact* of local authority, not its mere existence, that must be studied and evaluated.

NEPA certainly contemplated that the federal agency responsible for safely regulating ocean exploration would consider specific, pragmatic land-based obstacles to transporting ocean-bottom energy resources. This has not been done. The NEPA documents in their critical transportation aspects, are highly abstract. Despite the enormous volume of discussion they contain, the likely oil and gas delivery routes are nowhere described; one might almost suppose that levitation were the anticipated mode of transport. The NEPA documents read like a theoretical college thesis, written without the hard empirical data needed by any practical person making a decision. The impact statement studiously avoids the factors required for rational, practical decisionmaking.

Environmental impact statements are neither academic exercises nor abstract dissertations on general environmental problems. They must be specific, pragmatic, serious studies of actual projects with real environmental impact aspects. It is not sufficient to cram an enormous volume full of generalities, or to consider in depth irrelevant, tangential or marginal factors.

NEPA is an "environmental full disclosure law" aimed precisely at the sort of large-scale, government-initiated

project involved here, and designed to assure that potential environmental impacts are carefully thought through with serious insight. Chelsea Neighborhood Associations v. U. S. Postal Service, 516 F.2d 378, 386-87 (2d Cir. 1975), citing Monroe County Conservation Council v. Volpe, 472 F.2d 693, 697 (2d Cir. 1972).

NEPA's requirement for a "thorough study" and a "detailed statement" is the central feature of the Environmental Impact Statement, without which "the conclusions and decisions of the agency appear to be detached from and unrelated to environmental concerns." Monroe County Conservation Council v. Volpe, 472 F.2d 693, 697-98 (2d Cir. 1972). It is therefore essential that adequate information be made available before the critical agency decision is taken. Natural Resources Defense Council v. Callaway, 524 F.2d 79, 92 (2d Cir. 1975).

The Council on Environmental Quality Guidelines on Preparation of Environmental Impact Statements, 40 C.F.R. Part 1500, requires analysis of specific impacts on specific areas. It requires consideration of

The relationship of the proposed action to land use plans, policies, and controls for the affected area. This requires a discussion of how the proposed action may conform or conflict with the objectives and specific terms of approved or proposed Federal, State, and local land use plans, policies, and controls. . . . Where a conflict or inconsistency exists, the statement should describe the extent to which the agency has reconciled its proposed action with the plan, policy or control, and the reasons why the agency has decided to proceed notwithstanding the absence of full reconciliation.

40 C.F.R. § 1500.8(a) (2) (emphasis supplied).

This information on local land policies and controls was available to the Department of the Interior, but was not

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considered in the Environmental Impact Statement; nor were the effects of these policies on the specifics of the leasing program analyzed. While "foreseeing the unforeseeable" is not required, an agency must use its best efforts to find out all that it reasonably can:

It must be remembered that the basic thrust of an agency's responsibilities under NEPA is to predict the environmental effects of proposed action before the action is taken and those effects fully known. Reasonable forecasting and speculation is thus implicit in NEPA, and we must reject any attempt by agencies to shirk their responsibilities under NEPA by labeling any and all discussion of future environmental effects as "crystal ball inquiry".

Scientists' Institute for Public Information v. Atomic Energy Comm'n, 481 F.2d 1070, 1092 (D.C. Cir. 1973).

As the opinion in Sierra Club v. Coleman, 421 F.Supp. 63, 65 (D.D.C. 1976) recently noted:

The premise from which any environmental impact statement must begin is the recognition that its goal is to provide a detailed discussion sufficient to allow the agency decision-maker to fully consider in his or her decisional calculus the possible environmental effects of various alternative paths the agency might choose to pursue with respect to a given project. . . . NEPA requires that the agency make such a decision knowingly and with due regard for its environmental consequences. . . . The FEIS simply did not provide the information which would be needed for such informed balancing and decision-making in this regard.

(emphasis added).

Other recent cases have enjoined projects because of the failure of the decision documents to comply with NEPA's requirement of a detailed statement rooted in the real problems presented by the proposed action. Chelsea Neighborhood Associations v. U. S. Postal Service, 516 F.2d 378 (2d Cir. 1975); Natural Resources Defense Council v. Callaway, 524 F.2d 79 (2d Cir. 1975); Alabama ex rel. Baxley v. Corps of Engineers, 411 F.Supp. 1261 (N.D. Ala. 1976); Atchison, Topeka & Santa Fe v. Calloway, 382 F.Supp. 610 (D.D.C. 1974).

The Sale 40 Final Environmental Statement is a "site-specific" impact statement. Such a statement must consider the specific conditions in the Sale 40 area and the actual environmental effects of exploration and development, as well as reasonable alternatives. Natural Resources Defense Council v. Morton, 388 F.Supp. 829, 839-840 (D.D.C. 1974), aff'd, 527 F.2d 1386 (D.C. Cir. 1976). The purpose of a site-specific statement requires a discussion of the actual effects of a project on a specific area. The Sale 40 NEPA documents did not fulfill that function.

Effect of State and Local Powers on Pipeline Routing
 —Absence of Any Projection of Likely Pipeline Locations

Absence of any projections of likely pipeline locations illustrates the abstract nature of the relevant documents. The Department's assumptions were that oil and gas collected by gathering lines from separate platforms would be transported to onshore facilities along one to four corridors, in two 24" to 36" pipelines per corridor. The Secretary's postulates are included below:

It is anticipated that all oil and gas produced as a result of this proposed sale will be transported to shore by pipeline (special stipulation, Section IV.E.),

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though a possibility exists that tankers might be used. Oil and gas would be carried in separate pipelines, having first been separated on platforms offshore. Small gathering lines would collect production from platforms, gathering at central points where larger pipelines (24 to 36 inches diameter) would carry production in corridors. It is assumed that from one to four corridors would be established from offshore points to onshore facilities (2 pipelines per corridor). Offshore pipelines (assuming four pipelines) would traverse from 100 to 570 miles of sea bottom.

Sale 40 FES, Vol. 2, pp. 17-18.

Although as many as eight separate 36" pipelines were anticipated, there was no attempt to determine specific likely landfall sites or the ocean or overland routes that would be followed. The decision documents merely contain brief, vague and abstract conjecture concerning the extremely broad geographical areas that might be involved.

Terminal facilities would be located near the landfall of pipelines, and the oil pipelines would then proceed to refineries for processing of the crude oil. Because it is expected that the oil will be processed in existing refineries in northern New Jersey or the Delaware River Basin, it is most probable that pipeline terminals would be located somewhere along the New Jersey coast, with pipeline routes over land to the refineries. Because of the expense of laying, monitoring and maintaining underwater pipelines, landfalls near or on the Atlantic shoreline of New Jersey are more probable than those deeper into Delaware Bay. However, a pipeline landfall in Delaware, with a corridor through Delaware City and/or Philadelphia area refineries has also been suggested. A pipeline landfall

in Delaware could conceivably mark the beginning of a corridor to Baltimore, although the small existing capacity there is not thought to warrant it.

Id. at p. 227 (citation omitted).

All consideration of likely routes is clearly and explicitly deferred to the period after discovery of commercial quantities of oil.

If commercial quantities of oil are discovered, pipeline corridor management studies will be initiated to identify the least environmentally hazardous areas in which to require the placement of lines. Although these studies are primarily concerned with the OCS, they will also include areas suitable for the location of onshore processing and support facilities, and will be coordinated with other Federal, State and local authorities.

If commerical finds of hydrocarbons are made, then pipeline corridor management studies will be conducted in two phases. The first phase will identify macrocorridors (including potential landfall areas) using existing environmental and socio-economic data. Representatives of affected states as well as the petroleum industry, will be encouraged to participate in this planning effort. Once tentative corridors have been identified the second phase of the study effort will be initiated. It will consist of a BLM-funded contract study to obtain quantitative biological, chemical, geological and physical oceanographic baseline data for the tentatively identified corridors. The collected data, once analyzed, will be utilized to select the final corridors and landfall locations with the least net environmental and socio-economic adverse impacts.

Id. at p. 457.

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This deferral of an attempt to grapple with specifics borders on irresponsibility in view of NEPA's explicit mandate that all potential environmental considerations be weighed prior to the decision to proceed with major federal programs. NEPA required the Secretary to explore the site-specific impacts of pipelines along definite routes, at least to the extent that such routes were ascertainable based on information available at the time.

It is as if the federal government decided to proceed with the construction of a major highway connecting New York and Washington—approximately the distance to be covered by Sale 40 pipelines—but refused to reveal the contemplated route, whether bridges or tunnels would be utilized, whether mountains would be skirted or dynamited, or the impact on the area bordering the road. Such a course of action would surely be impermissible. Cf. Monroe County Conservation Council, Inc. v. Volpe, 472 F.2d 693, 697 (2d Cir. 1972); Citizens Committee for Hudson Valley v. Volpe, 425 F.2d 97 (2d Cir. 1970). Yet the analogy to the instant case is a strong one.

It is perfectly clear from highly credible expert testimony at trial from defendants' own witness that pipeline routes not only could have been predicted with a high degree of specificity and accuracy, but that such predictions were in fact made by the oil companies who put up hard cash—"megabucks", as one industry representative described them—in bids. Oil company experts projected relative costs of transportation problems that might arise from local and state zoning, and also predicted specific environmental factors attendant upon detailed alternative pipeline routes.

For example, the witness Franklin Brunjes, Manager of Land Transportation for Shell Oil Co. testified that he had computed the economic feasibility vis-a-vis tanker transport of various pipeline routes from OCS lease sites to

refining facilities in the Philadelphia area. His study encompassed four pipeline routes and one tanker route: Route 1 (identified as route 1A in testimony and in the attached appendix "D") from the drilling site, ashore in Cape May County and across Atlantic and Gloucester Counties to Philadelphia (200 miles); Route 2, around Cape May into Delaware Bay and overland to Philadelphia via Cumberland, Salem and Gloucester Counties (230 miles); Route 3, into Delaware Bay and up the Delaware River to Philadelphia (245 miles); Route 4, to Cape Henlopen (State of Delaware) and ashore in Delaware to Philadelphia via Sussex, Kent, New Castle and Delaware Counties (280 miles); and finally, Route 5, a 260 mile tanker route up the Delaware River. See Appendix "D", infra. The economic conclusions were precise and detailed; for a variety of production rates and over each of the four pipeline routes transportation was concluded to be less costly than tanker transport. See Appendix "E", infra.

These routes were not randomly selected. They were determined on the basis of reasonable assumptions and expert analysis of precisely the sorts of information which could have been available to the Secretary. A comparison of Mr. Brunjes' testimony concerning the reasonable hypotheses and procedures followed by Shell Oil Co. with the lack of procedures followed by the Secretary is instructive. Mr. Brunjes testified that Shell Oil Co. based its conclusions with respect to transportation feasibility and cost on various routes to Philadelphia. This was done because the Philadelphia area has the largest concentration of refineries in the northeast. Shell's determinations were also based upon such sensible assumptions as those concerning where oil would be found, how leases would be developed, the life of possible fields, the quality of the oil, the cost of the pipeline, and the availability of rights-ofway. His testimony on direct examination, in part, was as follows:

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Q. Mr. Brunjes, did Shell Oil Company acquire a number of leases from the United States as a result of OCS Lease Sale No. 40, held on August 17, 1976, relating to the mid-Atlantic offshore area?

A. Yes, I understand Shell was successful on twelve tracts.

Q. Mr. Brunjes, prior to Shell's bidding for those leases, did the company study the economics and feasibility of transportation of crude oil produced from the Sale 40 area to existing on-shore refineries.

A. Yes, we did.

Q. Could you describe the analytical work that was done by the company along those lines?

Tr. pp. 847-48.

A. To answer your question: prior to the lease sale, during the period of February, March and April of 1976, the exploration and production division of Shell came to me for my group and asked us to develop and analyze the transportation feasibility and cost associated with this offshore lease that you talked about.

In doing so we developed a feasibility and cost study that involved pipeline routes to the shore and overland toward the Philadelphia area.

We also developed costs that had to do with transportation by marine from this area into the Philadelphia area.

This activity involved calling upon the expertise of various segments within the company, our engineering organization who have had extensive experience in offshore pipelining; our marine organization, who is experienced in the marine matter; right-of-way groups, people of that nature.

Q. Why was the cost information prepared based on transportation to the Philadelphia refining area, Mr. Brunies?

A. The Philadelphia area, as far as the Northeast is concerned, contains the largest concentration of refineries. I believe they have a capacity in the order of 900,000 barrels a day to a million barrels a day capacity up there in the Philadelphia area.

This is much larger than any other area of the Northeast Coast.

Q. Would you state to the Court the basic criteria or assumptions under which the cost information is developed.

A. To do a study . . . [o]ne has to assume oil will be found and also where the oil would be found.

We looked at several locations within that area.

We looked at a range of production going from, say, 25,000 barrels a day up to 200,000 barrels a day.

We also had to assume how it would be developed and what the decline rate would be on the production, generally the life of the field.

We got that information from our exploration and production people. That kind of tells us where we have to start.

We also had to assume the quality of the oil, whether it was pumpable or not, what its characteristics are.

We also had to assume there would be . . . a normal type oil that could be processed by existing refineries in the Northeast area and particularly the Philadelphia area.

Q. You mentioned pumpability of oil. Do you mean pump from the ground or pump for purposes of transportation?

A. Pumped for purposes of transportation.

Also, criteria that we live by, too, was, say, pipeline design or costing of pipeline that meets or ex-

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ceeds all applicable or federal, national standards for pipeline design.

Also, we had to, in taking a look at the overland route, we took a quick look at the right-of-way availability, and we assumed that on the right of way that wherever possible that existing corridors would be used. In other words, railroad right of ways, along roads, utilities, easements, gas lines, electric lines—that nature.

Q. Are those the basic assumptions. Can you think of any others?

A. No, I think that's the major ones. There were many others, but those were the major ones.

Tr. pp. 850-53.

Major factors in the determination to consider pipeline routes other than Route 1, the most economical alternative, were local zoning and related powers and opposition to pipelines, and particular environmental threats—precisely the considerations that the Secretary failed to evaluate. Mr. Brunjes testified that these alternate routes were:

. . . determined not by detail field analysis—on the ground analysis, but in pursuing this in the various courthouses and through the various local administrations and whatever. This was developed from detailed maps that show railroads. It was also developed from past experiences in types of land like this. It was also developed through a process of at least screening out—screening out to try to determine whether there were any state or local laws or ordinances or regulations that similarly excluded pipelines from traversing this area.

Tr. pp. 864-65.

Q. You were able to find out about the local opposition that was developing in New Jersey, weren't you?

A. As far as looking into the right of way or the possible routes on shore, I believe, as I have talked about yesterday, we had looked to the extent that we were trying to find out whether there were ordinances, local laws or state laws, that summarily prohibit pipelines from coming ashore—

Tr. p. 988.

Q. . . . Now, . . . you make this statement:

"This study is essentially a 'desk study' in nature since all concepts, assumptions and estimates are based solely on information gathered from available maps of the area. Prior studies relate to the areas environment and ecology and other available published matter without benefit of on site investigative research. Since many conditions which could seriously effect facets of the study have yet to be defined by the state and Federal authorities, the study concepts are limited to known and published information at the time of the study."

What are the many conditions that you refer to which you say could seriously affect facets of the study and which have not yet been defined by state and Federal authorities?

A. One facet that occurs to me is possibly that you know, any local entity, a county, any state government, could adopt regulations or laws that would affect the routing of the pipeline.

Q. Anything else that you can think of, Mr. Brunjes? You mentioned . . . an example of a local action. But your report specifically refers to state and Federal authorities.

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A. I believe in this context it states that pretty generally. And it means a state level or within a state, whether township, town, local zoning or whatever.

Tr. 1008-09.

Focusing on potential adverse environmental impacts of specific routes, counsel read the following paragraph from a study paper prepared by Mr. Brunjes in connection with the economic feasibility study:

[R]ecently this transportation study and its economics were evaluated utilizing the straight median of New Jersey as the final location to come ashore with the oil transported from production fields. However, recent decisions made by the Environmental Protection Agency for the State of New Jersey revealed the possibility of excluding the entire Atlantic coast of New Jersey from any offshore oil lines, and therefore a shore approach location in the Delaware Bay was selected as possible landing point. However, this may cause considerable local opposition because of the areas economic reliance on the oyster beds located from the Maurice River to Arnold Point.

Tr. pp. 987-88.

Had the Secretary been at least as conscientious as Shell Oil in exploring specific pipeline locations from an environmental perspective, he certainly would have considered the route into the Delaware Bay and up the Delaware River to Philadelphia, which was studied by Mr. Brunjes and considered a feasible and likely corridor.

Testimony at trial demonstrated that Route 3 might have grave environmental consequences along its entire water route. The construction of such a pipeline would, of necessity, involve extensive digging, dredging and filling over a

prolonged time period. There can be no doubt that such construction would adversely affect important marine life.

The Secretary's failure to project specific pipeline routes has thus resulted in a Final Environmental Statement which does not even attempt to consider the potential harm to shellfish spawning grounds and innumerable species of fish and waterfowl. Nor does the vague Final Environmental Statement assess the affect of the pipeline construction on swimming, boating, fishing and other recreational activities on and around the Delaware Bay and River where pipelines are likely to be sited.

The adverse effects of a pipeline do not terminate when construction is completed. An underwater route may require changes in anchorages and other facilities. Moreover, possible pipeline leaks and resultant oil spills may cause great harm.

These impacts along specific likely routes could have been, but were not, examined in the decision documents. It is clear from the testimony that these economic, environmental and political considerations were all readily available to the Secretary and could have supported similar projections by him. The Shell Oil expert testified:

The Court: Based upon this [information], generally available, I take it, apart from the philosophy of your company, you were able to predict fairly closely the landing sites and best routes to Philadelphia?

The Witness: I would say so. These would seem to be reasonable. I think experienced people would tend to line out the most suitable tracts or identify them without too much effort.

The Court: Possibly with expertise, certainly some of those available to the Government, would based on your general professional knowledge, come to roughly the same conclusion, would they not?

The Witness: Yes.

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The Court: The economic and other factors are those that you can't avoid, isn't that so?

The Witness: That's generally correct, yes.

Tr. p. 1044.

The evidence clearly established that the Secretary did not engage in inquiries adequate to inform federal, state and local decisionmakers and the public of the alternative modes and routes of transport of Sale 40 oil and gas, and to enable government decisionmakers to understand and plan to cope with the impacts of reasonably defined tanker-pipeline options in their zoning, land use and coastal zone management planning processes.

4. Economic Consequences of State and Local Regulation

The economic aspect of the exercise by state and local governments of their powers to prohibit or restrict onshore facilities was inadequately addressed in the NEPA documents. These controls could clearly lead to longer and more expensive pipelines or to the use of tankers. In order to assess the relative costs and benefits of the proposed action the potential costs to the program resulting from the exercise of such controls should have been detailed.

NEPA mandates a case-by-case balancing judgment on the part of federal agencies. In each individual case, the particular economic and technical benefits of planned action must be assessed and then weighed against the environmental costs.

Calvert Cliffs' Coordinating Committee v. A.E.C., 449 F.2d 1109, 1123 (D.C. Cir. 1971). See also Chelsea Neighborhood Association v. U. S. Postal Service, 516 F.2d 378, 386

(2d Cir. 1975) ("NEPA, in effect, requires a broadly defined cost-benefit analysis of major federal activities."); Alabama ex rel. Baxley v. Corps of Engineers, 411 F. Supp. 1261, 1268 (N.D. Ala. 1976) (NEPA requires that environmental and non-environmental factors be quantified where reasonably possible and included in a cost-benefit analysis in the project EIS.).

Mr. Brunjes' testimony clearly established the feasibility of "costing-out" different transportation forms and routes, and the high degree of precision with which economic conclusions can be reached in this sphere:

Q. Before discussing the other routes, I would like to ask you some questions about your analysis of those two routes, which are . . . 1A and 2 on the exhibit.

A. This study again was for the purposes of assessing leased bids. That's why the E and T Division came to us and so when we looked at trying to identify the capital costs and operating costs and other various cost elements that go into a long term transportation situation like this, we took those costs and we generally reduced them to the common denominator of unit cost of transportation over the life of the field, that we assumed in this study.

Q. What was the unit that was used?

A. Cent per barrel is what we reduced it to.

A. On the routing from this area going down one A to the Philadelphia area, and we assumed various levels of production like I said. To give you an example, I will use two hundred thousand barrels a day production rate and two hundred and twenty five thousand barrels per day production rate. Two hundred thousand barrels we ended up with a unit cost of .47 per barrel. At a production rate—this is an initial

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rate of one hundred and twenty five thousand barrels a day—we ended up with a cost—an average cost over the life of the field of .59 a barrel.

Q. How did it compare with tanker transportation at those production levels?

A. The tanker transportation from the area out here into Philadelphia by comparison was a \$1.16 for two hundred thousand barrels and \$1.40 for one hundred and twenty five thousand barrels a day of production.

By comparing the numbers, we see that the tanker transportation at those volume estimates and at those locations and going to that destination, the tanker rates are more than double the pipeline transportation rates in this instance.

Q. All right, sir, at my request and in connection with this litigation, did you make some further cost analysis with respect to other routes of possible pipeline routes from the Sale 40 area to the Philadelphia area?

A. The routes that we looked at were a pipeline route that would come down around Cape May and then be laid up the Delaware Bay area up into the Philadelphia area and come ashore in close proximity to the Philadelphia area.

Another route that we looked at at the same time was a pipeline route all the way, but it went ashore down in the Delaware area and then came around and up into the Philadelphia area.

Q. Mr. Brunjes, before we get into costs with respect to those additional routes, and before leaving Route #2, which is the route going around Cape May avoiding the Atlantic Coast of New Jersey, would you tell us . . . what your cost analysis or your cost estimates showed with respect to the cost of transpor-

tation by Route 2 as opposed to the tanker transportation?

A. Route 2 around Cape May into the Delaware Bay area, that was along this line and regressing a little bit. For two hundred thousand barrels per day rate of production, that turned out to be 61 cents a barrel.

A. The associate Marine Transportation is \$1.16.

Q. What about the production level of 125 thousand barrels?

A. For approximately 125 thousand barrels a day, this route down here around Cape May and coming ashore in the Cumberland-Cape May area, resulted in 77 cents per barrel as compared to the other routing of 59 cents a barrel, and the tanker cost of \$1.40 per barrel.

I might add too that these transportation costs, the major consideration in these transportation costs as they were looked at is an industry facility, industry pipelines going from industry producing areas into an industry refining center. They would be common carrier type of facilities—multiple ownership and this is generally done in the industry. The major purpose of this is to get economy of scale. Everybody benefits from the joining, both big and small producers, shippers.

Q. With respect to OCS Production, .* . . is the common use of pipelines customary and usual?

Q. The OCS Act requires that as a condition of giving [rights-of-way] for laying pipelines in Federal waters, that these pipelines will be common carrier pipelines.

They will provide transportation to all who desire at reasonable rates and without discrimination.

Q. Do you mean in your analysis that you used

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routes that would be usable—feasible if production were obtained in all of the areas of the sale of 40 lease areas?

A. Yes.

It is my understanding that, as I said before, that the maximum production that was indicated in the environmental impact statement with 320 thousand barrels a day. A single pipeline would be able to handle this quantity.

Q. Now, with reference to route 3, which is shown in the exhibit, can you tell the Court the results of your comparison of the pipeline transportation in comparison with tanker transportation?

Again, you have to indicate your levels.

A. Route 3, the Marine pipeline transportation route all the way to the Philadelphia area, it's more lengthy and under water pipe laying is more expensive than onshore laying. It's a longer route and more expensive. The cost on that increased to 91 cents a barrel and two hundred thousand barrels a day production rate. That compares again to 47 cents on this 1A route and vs. a dollar sixteen a barrel by the tanker routing.

Q. So transportation by pipeline at that production level is still more economical than tanker transportation?

A. Still more economical than tanker, although increasing because of the distance and expense.

At 125 thousand barrels per day production rate, the unit costs goes up further. It goes from 91 cents to \$1.15 and that again compares to the 59 cents by this 1A route and \$1.40 by the tanker route.

Again it is less expensive than the tanker but it is more expensive at the volume—the assumed volume drops off.

Q. What about the comparison of cost with reference to route 4, which is the pipeline route that goes through the Delaware Counties into the Philadelphia area?

A. That pipeline is a longer route and it would be more expensive to install. So its cost is generally higher. Its cost would be for two hundred thousand barrels a day maximum production rate, 95 cents a barrel, and again comparing to 47 cents by the short pipeline and \$1.16 by tanker. At the 125,000 barrels a day production rate, it would be \$1.20 per barrel as compared to \$1.40 by tanker. So there is still about a twenty cents a barrel difference between tankers and pipelines.

In summary on this, what it tells us is that as the distance increased, as far as pipelines are concerned, and as the assumed volume drops off, that pipeline costs do increase and they do compare fairly close to tanker transportation. I think we looked at—in looking at lesser volumes, lower than 125 thousand barrels a day production rate, that tankers and pipelines became much closer. That is comparing the long route—comparing the short route to the tanker, even at low production rates, the pipelines are much less expensive.

Tr. pp. 857-863; see Appendix "E," infra.

The court was impressed by the skill and honesty of Mr. Brunjes. It credits his testimony in full.

This evidence establishes that it was quite possible for the Secretary to engage in an economic assessment of the effects of local opposition to pipelines. It was also reasonably necessary in order for the Secretary to know the realistic costs of the proposed action as compared to the benefits, and in order to assess fairly the economic feasibility of pipelines as against tankers. Without this information the Secretary could not make a reasoned deci-

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sion as to the potential costs to be incurred by the proposed program.

Where, as here, information was available to the government and meaningful analysis was reasonably possible on issues of such environmental significance, the Interior Department was under a NEPA-imposed obligation to disclose the information and undertake the analysis. The conclusion is inescapable that if, in their own economic interest oil companies can project, examine and analyze fairly detailed pipeline corridors, the Secretary of the Interior, in the critical public interest of environmental protection, must do so as well.

B. Defective Cost-Benefit Analysis of Lease Sale 40

In balancing the projected benefits of Lease Sale 40 against its potential adverse environmental impact and against alternative energy producing programs, and in order to arrive at a reasoned decision on whether to proceed, it was essential for the Secretary to make a realistic estimate of the investment costs necessary to produce a given quantity of energy. Critical components of that factor are the estimated quantities of oil and gas reserves, expected peak production levels, and the cost of pipeline construction. This last item has exceptional significance, in light of the Secretary's firm assumption that pipelines, rather than tankers, would be the actual mode of transport. The accuracy of the Secretary's assessment of each of these components was called into serious question by highly credible evidence.

1. Underestimate of Finding Costs

Based on data sources readily available prior to the preparation of the Final Environmental Impact Statement, an expert witness concluded that the finding cost estimates

used in the decision documents were unrealistically low, relative to recent industry experience. The Secretary estimated that, assuming large gas and oil reserves, finding costs were 14.5 cents per million British Thermal Units (BTUs), and, on the hypothesis of low reserves, 12.26 cents per million BTUs. The expert testimony, on the other hand, established that realistically determined finding costs for new oil would in fact be 168% greater in the first instance, and 127% greater in the second.

Substantial portions of the testimony of Mr. George L. Donkin, an economist, are reproduced below to indicate the extremely sound and thorough foundation for his conclusions that in this, and related areas, the Secretary's data was grossly inaccurate. As in the case of Mr. Brunjes, this witness impressed the court as completely reliable and credible. His testimony was unshaken by cross-examination:

- Q. [D]id you make a study of the investment costs associated with the findings and transporting of oil and gas from sale 40?
 - A. Yes, I did.
- Q. Did you also make an investigation of the peak production levels and . . . the probability of the reserve estimates presented to the Secretary for his evaluation?

A. Yes.

- Q. What data sources did you consult which were available to the secretary prior to May of 1976?
- A. I consulted and used in my study data sources from the Federal Power Commission, data sources that had been prepared by petroleum consultants and submitted as part of the official record in Congressional hearings, and data sources prepared by major oil companies which were submitted to the natural gas

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survey. All of these sources were readily available in the public domain . . . to compare the Interior Department estimated cost against cost finding costs estimates that I was aware of and that many economists, geologists and petroleum engineers familiar with searching for oil and gas are also aware of.

- Q. What was the Secretary's estimate of the cost of finding hydrocarbons in the low reserve estimated case?
- A. Converted to millions of BTU's it's 12.26 cents.

 . . . The [I]nterior [D]epartment presented two total investment estimates for the sale 40 acreage. I prepared a separate exhibit for each of those total investment estimates. And in the high reserve case of 1.4 million and 9.4 trillion cubic feet. These reserve estimates and investment cost estimates relate to a finding cost of 14.5 cents per million btus.

I would like to add at this point that these finding cost estimates are unrealistically low relative to recent industry experience.

- Q. Will you explain, by moving on to your next exhibit the sources on the basis for your finding that the [S]ecretary's estimates were unrealistically low?
- A. Yes. . . . It presents the estimated costs of finding new crude oil . . . and . . . it shows that . . . new crude oil reserve costs [in 1974] approximately 32.86 cents per million btus to find.
- Q. Now, what estimates by the [S]ecretary are you contrasting that 32.86?
- A. That could be contrasted with either the low reserve estimate or the high reserve estimate case. In the first event, the finding costs for new oil would be approximately 168 percent greater than the Interior [D]epartment estimate.

In the second instance, the finding costs would be approximately 127 percent greater than the Interior [D] epartment estimates.

Q. What was the data source that gave you the information from which you reached the conclusion that the Secretary had underestimated the cost to the extent that you indicated?

A. The data sources identified at the bottom of this exhibit as the FTC, Bureau of Natural [G]ases staff analysis of the costs of finding and producing new crude oil.

Q. And that was dated?

A. June, 1975.

Tr. pp. 1050-56.

Mr. Donkin also testified that estimated finding costs for non-associated natural gas were 77% greater than Interior's high case resource estimate and 109% greater than its low case estimate:

Q. Did you find any further corroboration from the official data sources that the [S]ecretary had substantially underestimated the cost of finding new natural gas, and if you did, would you please call our attention to the specific exhibit that shows that?

A. Yes. . . . [O]n September 29th, 1975, the Federal Power [C]ommission staff submitted a presentation in the nationwide rule making concerning new natural gas prices. That presentation also contains finding costs estimates for new non associated natural gas. Those estimates appear at page 2 of my exhibit number two. And stated in terms of cents per million btus. The FTC staff estimate is 25.66 cents per million btus.

Q. How does that FTC estimate of 25.66 cents for a million btus compare to the Secretary's estimate in both the high reserve and the low reserve cases?

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- A. Again, it's substantially greater. Approximately 77 percent greater than the Interior [D]epartment's high case resource estimate, and one hundred and nine percent greater than the Interior [D]epartment estimate for the finding cost associated with the low resource estimate.
- Q. Do you know whether the Federal [P]ower [C]ommission agreed substantially with the estimates that have been made by its staff with respect to the finding costs for new non-associated natural gas?

A. Yes. . . .

Tr. pp. 1056-57.

2. Underestimate of Pipeline Construction Costs

Additional testimony by Mr. Donkin, based on information readily available to the Secretary, indicated that the critical element of pipeline construction costs was greatly underestimated in the NEPA documents. While the Secretary used a figure of \$1,000,000 per mile for a large diameter off-shore pipeline, the realistic cost is on the order of \$1,750,000 per mile.

In the low resource case the cost of a pipeline was, as a consequence of this disparity, underestimated by 73 million dollars. In the high resource case the error was 330 million dollars:

- Q. To what dollar extent does the actual experience, cost experience in the Gulf of Mexico for offshore large diameter pipelines exceed the estimates of the Secretary contained in the PDOD for Sale 40.
 - ,A. It is approximately 700,000 per mile and-
 - Q. In excess-
- A. In excess of the Interior Department estimate. One can also relate that to a total investment cost differential in the Interior Department low resource esti-

mated case. They assume 100 miles of offshore pipeline. Therefore, that would convert to a one hundred million dollar expenditure. And in this case it would be one hundred and seventy three million dollars. Therefore, it's approximately a seventy three million dollar underestimate for the pipeline cost.

A. In the high resource case, I have to make a calculation. The Interior Department assumed 450 miles which would be 450 million dollars as opposed to 780 million dollars that would be required to construct the same pipeline facilities using this Gulf of Mexico cost per mile figure. Therefore, we are talking about a difference of 330 million dollars.

Q. 330 million dollars representing the extent to which the Secretary underestimated the cost of building 450 miles of pipeline?

A. That's correct.

The Court: Is this about the same cost of an oil

pipeline or is it different?

The Witness: Your Honor, I understand that it's approximately the same in the off-shore area. I made numerous inquiries, I talked to many pipeline—I shouldn't say many—to three pipeline experts of the Federal Power Commission and they assured me that in the offshore areas pipelines cost per mile do not vary substantially if at all.

Tr. pp. 1059-1062.

3. Underestimate of Total Investment Required

As a result of the underestimates with respect to finding and pipeline costs the realistic investment cost for the Sale

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40 area in the low reserve case is in fact between 88.8% and 131.9% greater than Interior Department estimates. With respect to finding new natural gas, in absolute terms this results in additional costs of \$756,790,000. In the high reserve case the realistic costs are between 70.7% and 100.9% higher than Department of Interior estimates, or in absolute terms between \$2,359,773,000 and \$3,668,733,000 greater. Mr. Donkin's testimony on this matter, reproduced in part below, describes in detail the degree to which the Department of Interior underestimated the proposed costs:

Q. . . . Exhibit 4 is entitled, Estimated Realistic Investments Costs, Mid-Atlantic Sale [40] reserve estimates. Will you please explain what comparisons you are making on this exhibit?

A. In this exhibit I am simply adjusting the finding cost for the sale forty acreage and the pipeline cost to reflect what I believe to be the realistic finding cost and pipeline cost for large diameter offshore pipelines to develop a total estimated investment cost for the sale area. I then compared that against the Interior Department estimate, and in the low reserve case the realistic investment cost exceeded Interior Department estimates between eighty-eight point eight percent and one hundred and thirty-one point nine percent.

Q. What did you arrive at as your total estimated realistic investment costs for finding gas?

A. These will range between 1.6 billion dollars and \$1.97 billion.

Q. As contrasted with your total figures, what were the Interior Department's estimates and where do we find them?

A. At line 7, in both columns, \$852,000,000, and \$852,000,000—

That estimate also appears at page 6 of the PDOD for Sale No. 40.

- Q. So the Interior Department's estimates of \$852 million are derived from the PDOD for Sale 40?
 - A. Yes.
- Q. Your estimates are derived from the FPC data you previously identified?
 - A. That is also correct.
- Q. To what extent did you find the Interior Department had underestimated the investment costs in the low case reserves?
 - A. By an absolute magnitude of \$756,790,000.

Q. What does the figure in the third column, \$1,123,000 plus represent?

A. That represents the amount by which Interior underestimated the investment costs for this acreage. The finding costs are 32.86 cents per million btu. . . . [T]he percentage by which the realistic investment costs exceed the Interior Department's estimate, . . . range between 88.8 percent and 131.9 percent.

- Q. [Y]ou found that the Interior Department had underestimated the investment costs in the amount of —by the amount of \$2,359,773,000 in column 2 and [\$3,668,733,000] in column 3; is that right?
 - A. That is correct.
- Q. The percentage by which the realistic investment costs exceed the Interior Department's estimate is contained at the foot of both columns; is that correct?
 - A. Yes, sir.

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Q. And the respective figures are 70.7 percent and [109.9] percent?

A. Yes.

Tr. pp. 1068-1072.

4. Overestimate of Peak Levels of Production

Finally, Mr. Donkin concluded that the peak levels of oil and natural gas production assumed by the Interior Department could never be obtained given the Department's own reserve estimates. Based on those estimates, peak oil production in 1988 would in fact be 15,000 barrels per day less than assumed by the Secretary in the low reserve case and 60,000 barrels per day less in the high reserve case.

In the low case, reserves necessary to support the level of peak production assumed by the Secretary would have to be 52.5% greater than government estimates. In the high gas reserve case, resources would have to be 51% greater to support the predicted peaks. On this matter, Mr. Donkin testified:

. . . [N]atural gas reserves cannot sustain their peak production level for much more than a year or two; in particular from the offshore areas. The decline is relatively rapid.

I prepared this exhibit ["Annual Natural Gas Production as a Percent of Proved Reserves for Future Offshore Gas Reserves Additions"] in conjunction with a later exhibit of mine which was prepared as a result of my observation that the Interior Department's peak natural gas production level really could never be obtained given the reserves estimates that they were assuming.

To illustrate, in the 9.4 trillion cubic feet case, the Interior Department assumes that natural gas produc-

tion will peak in 1989 at a level of 3,080,000 mcf per day. This is approximately 1.124 trillion cubic feet per year, which is nearly 12 percent of the total reserves, natural gas reserves, assumed for the entire range area.

The reason that this is virtually impossible to obtain is that in 1981 natural gas production commenced increases rather substantially in 1983, more substantially in 1985, and the reserves that were brought on the stream relative to that production, by the time you reach 1989 have already commenced a substantial production decline.

- Q. What would the reserves have to be in order to realize the production schedule that was projected by the Secretary?
 - A. 489,707,000 barrels.
- Q. As compared to his estimate of 400 million; is that right?
 - A. That's correct.

[T]he reserves required would be even more significantly greater to obtain the Interior Department's peak daily natural gas production estimate. Typically 3.965 trillion cubic feet of natural gas would be required—

- Q. Tell us what the Secretary's reserve estimate was.
- A. The Secretary's reserve estimate in his low resource case was 2.6 trillion cubic feet.
- Q. Is it possible with a reserve estimate of that amount to attain a peak natural gas production of 850,000 cubic feet. . . .
 - A. I do not believe it's possible if production com-

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mences in 1981 and increases at the levels forecasted by the Interior Department in the PDOD.

- Q. How much would the reserve have to be in order to realize the Secretary's estimate in the low gas reserves case?
 - A. 3.965 trillion cubic feet.
- Q. That figure is what percentage greater than the Secretary's estimate of 2.6 trillion cubic feet which is contained in the PDOD!
 - A. 52.5 percent greater.
- Q. What were your findings as to accuracy of the Secretary's estimates of peak oil production?
- A. Again, the total reserves, total oil reserves would have to be greater to obtain the peak oil daily production levels assumed by the Interior Department.
- Q. What did the Secretary estimate as being the peak oil production daily?
 - A. 320,000 barrels per day in 1989.
- Q. What did he estimate in the high reserve case as being the reserve of oil?
 - A. 1.4 billion barrels.
- Q. Could the field reach a production of 320,000 barrels daily?
- A. No. In fact, given the deliverability decline which I assumed in preparing these exhibits, peak production would be obtained in 1988 at approximately 260,000 barrels per day. This is 60,000 barrels per day less than the Interior Department's estimate.
- Q. To what extent did the Secretary overstate the peak daily production, in your opinion?
- A. By approximately 25 percent in terms of reserves; however, in terms of peak daily production, by approximately 23 percent. . . . Given that [gas] reserve estimate, they assumed that in 1989 3,080,000

mcf per day would be produced and that this would represent the peak daily production. This exhibit shows that in order for that estimate to obtain, natural gas reserved would have to be 14.248 trillion cubic feet as opposed to the Interior Department's estimate of 9.4 trillion cubic feet. This 14.248 trillion cubic feet figure is approximately 51 percent greater than the Interior Department's estimate.

Tr. pp. 1073-82.

 NEPA Consequences of Gross Misestimates of Costs and Benefits

The Secretary's cost-benefit analysis is vitally linked to critical NEPA issues. Its relevance to the tanker-pipeline issue has previously been alluded to, and its connection to other environmental impact issues is also clear. If the Secretary has grossly understated the investment costs and overstated the daily production rates and reserves, then the timing, locations, size and number of pipelines, drilling wells and duration of construction may differ from the Secretary's projections, with resultant environmental and socio-economic impacts (offshore and onshore) qualitatively and quantitatively different from those estimated in the NEPA documents.

The Secretary's duty under NEPA to compare Sale 40 to its alternatives, and to weigh the latter and their environmental effects depends upon an accurate cost-benefit analysis of the Sale 40 project, without which the Secretary and other decision makers cannot adequately determine priorities and the course of action tending most strongly to further the public interest. While we find it unnecessary to consider plaintiff's submission that NEPA requires substantive review of the administrative decision, and no such review has been undertaken in this case, there is no disagreement that, at a minimum, the Secretary's decision

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may not be arbitrary and capricious. See Kurwin, Substantive Review Under the National Environmental Policy Act, 3 Ecology L. Q. 173 (1973).

Where, as here, the economic costs and benefits of the planned action were seriously and grossly misrepresented or omitted, there could be no adequate balancing of economic benefits against environmental costs. It should be emphasized that the discrepancies are so substantial that they cannot be attributed to mere differences in judgment. They were so inadequate as to constitute, for NEPA purposes, a failure to make a meaningful inquiry. As a result, the Secretary's decision on Sale 40 was in this respect arbitrary and capricious and in violation of NEPA.

C. Failure to Evaluate Separation of Exploration and Production Leasing

The Department of Interior failed to adequately consider alternatives to the Sale 40 leasing procedure. The leases utilized grant exploration, development and production rights to a successful bidder in one document. The government never considered exploration to determine the extent of oil and gas reserves, and their location before granting exclusive rights of production.

In uncontradicted trial testimony, the government's witness, Judith Gresham, flatly stated that no alternative had ever been considered by the New York City office of the Bureau of Land Management in preparing for Sale No. 40. Tr. 768-69. It was this office that coordinated preparation for Sale 40 leasing and that prepared the relevant NEPA documents. Ms. Gresham testified that the existing lease forms for the outer continental shelf had always combined exploration, development and production rights and that no thought had ever been given to proceeding differently in Sale 40.

This failure to consider exploration before leasing for production was particularly anomalous in view of the limited government knowledge of the nature, extent, and exact location of probable oil and gas in the area. Private oil companies had been making costly preliminary studies for some ten years but the government had not. Apparently only on-the-spot exploratory drilling can determine what, if any, hydrocarbons will be available.

The final commitment to grant exclusive rights to exploit specific tracts of governmental land—without even considering prior exploration—occurred in the face of no less than thirteen public comments on the Draft Environmental Statement for Sale No. 40, including among them remarks by the States of New York, New Jersey, Delaware and Maryland, urging that exploration and development phases be separated. FES Sale 40, Vol. 3, p. 67. The thrust of these comments was that separation of exploration and development would allow government at all levels to exercise timely and essential controls over environmental, social and economic impacts, especially those associated with onshore development.

Notwithstanding this impressive body of public comment, the possibility of separating exploration from development was effectively ignored in the Sale 40 Final Environmental Statement. Section VIII of the impact statement, which discusses "Alternatives to the Proposed Action" is wholly silent on this option. In the Sale 40 documents the only reference to this alternative is contained in a few lines of response to comments on the Draft Environmental Impact Statement, which summarily dismiss the proposed separation as impossible under the provisions of the OCS Lands Act of 1953. FES Sale 40, Vol. 3, p. 67.

The Environmental Impact Statement does briefly mention the alternative of government exploration, Vol. 2, pp. 582-83, but the discussion is, considering the thousands of

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pages devoted to relatively insignificant matter in the NEPA documents, woefully inadequate. The complete treatment reads as follows:

Exploratory drilling conducted by or sponsored by the Federal Government prior to holding a lease sale would be an alternative within the proposed action. This would involve an alternative approach to one aspect of the present Federal leasing system. At the present time there is little exploratory drilling on the OCS prior to leasing. The U. S. Geological Survey receives all engineering and geological data from companies which have drilled on leases issued on the OCS. These data and geophysical data, purchased on the open market, are used by the Geological Survey to develop OCS lease policies and evaluate tracts prior to leasing.

By conducting such an exploratory program, the Government would obtain valuable data on stratigraphy and structure of the potential leasing areas. It would also have more detailed information with which to base resource estimates and evaluate tracts (and their monetary value) before leasing. In addition, coastal states might be able to obtain a better concept of expected development onshore.

To properly evaluate the range of potential hydrocarbon traps in the Mid-Atlantic, upwards of 60 or more exploratory wells might be required [R. H. Bowerman, Southern Connectitut Gas Company, stated that exploration staff of the Associated Gas Distributors estimates 50 to 75 wells might be needed (oral testimony, public hearing, DES for proposed OCS lease sale #40, 1976).] The magnitude of such a program would put a strain on personnel, procedures for contracting and hiring, and the Federal

budget (especially at \$4-\$7 million per well). This procedure could delay leasing for several years just to evaluate the data, further increasing Mid-Atlantic reliance on foreign supplies of oil and gas during that period. One decided benefit would be the Federal Government's increased capability to evaluate tracts. However, under this system the Government takes much of the discovery risk. If the Destin Dome offshore Florida had first been explored by the Federal Government with no discoveries, around \$1 billion dollars of bonus bids might never have been generated for the U.S. Treasury as a result of the MAFLA sale. On the other hand, if the Federal Government should be responsible for exploration, due to manpower and budget constraints, it would be possible that some less remote though promising areas would not be explored, in favor of other more obvious prospective areas. The Alaskan North Slope area, for example, was explored for several years before any discoveries were found. It is possible as well that oil and gas resources may yet be found at Destin Dome.

There is no attempt to measure the government's potential exploration costs against the value of the information that exploration would reveal, especially if oil and gas are found. The conclusory statements concerning the cost effectiveness of the present system are undocumented and probably inaccurate. Furthermore, there is no discussion of the possibility that the government could assume only part-interest in an exploratory effort, or of the complimentary reform of requiring companies in the bidding process to provide so-called "proprietary" information concerning potential reserves.

We need not speculate that the exploration-before-leasing discussion in the Environmental Impact Statement was

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mere window dressing. Mrs. Gresham's testimony demonstrated that this was the case. Like so much else in the NEPA documents, the material is presented to make it appear as if a candid analysis has taken place, designed to assist the public and decision makers, when in fact the decision on the issue has already been made.

These deficiencies in the Sale 40 document were not remedied by the Final Environmental Statement, Proposed Increase In Oil and Gas Leasing On The Outer Continental Shelf, (PEIS), which describes three alternative exploration schemes. The first proposal envisions a two-stop process: exploration leases to private industry groups first, followed by production leases upon discovery. The Environmental Impact Statement contains a very brief description of this alternative, but fails to comment on its feasibility. (PEIS Vol. 2, pp. 353-54).

The second proposed option, a federal exploration program, is dismissed with scant discussion because of the belief that "[e]ven a limited effort would put a strain on personnel, procedures for contracting and hiring, and general organizational structure." PEIS Vol. 2, p. 354. This rationale expresses a questionable assumption at best, especially where the stakes are so high. The reason would be acceptable were it put forward by a small, poor, developing nation. It seems incredible when it comes from spokesmen of the most powerful government in the world whose budget is measured in the hundreds of billions of dollars.

Other ground for rejection—the fear that a "hostile reaction might be encountered from industry," (probably the real reason, although not a valid one) and that a duplication of efforts would result from continued private exploration—are likewise untenable. No private duplicative drilling could take place on government land without government approval.

The third alternative presented, government-conducted off-structure stratigraphic driling, is rejected because of

budgetary and manpower constraints PEIS Vol. 2, p. 355,—a matter subject to annual review by Congress and the President.

The Environmental Impact Statement for the proposed increase in leasing also refers to a "two-stage" outer continental shelf development program pursuant to which exploration and development would be divided for the purpose of cost-benefit analysis of production of known reserves before leases are sold. This brief account neither accepts nor rejects the concept of this two-stage development, but merely describes it. PEIS Vol. 2, pp. 350-52.

Each of these alternatives is cursorily dismissed in a few paragraphs that fail to provide the information that a decision-maker requires for an adequate evaluation of the feasibility of these alternatives or their costs and benefits relative to the proposed action. The offhand rejection of the alternative of separating exploration from development and production cannot be justified on the pretext that the option entails a leasing procedure inconsistent with provisions of the Outer Continental Shelf Lands Act of 1953. Final Environmental Statement Sale No. 4, Vol. 3, p. 67. The agency was obliged to disclose which specific statutory provisions it deemed to be at variance with the alternative and the manner in which it was deemed to be inconsistent. More significantly, it is a well established rule that an alternative is not ipso facto unreasonable merely because it requires legislative implementation. Natural Resources Defense Council v. Morton, 458 F.2d 827, 837 (D.C. Cir. 1972). Even assuming that legislation would be required, the proposed alternative of separating the phases of exploration, development and production is not "remote and speculative" and therefore falls well within the "rule of reason" standard of Natural Resources Defense Council v. Morton. So much is implied by the Sale 40 Final Environmental Statement itself, where reference

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is made to the fact that amendments to the Outer Continental Shelf Lands Act, which authorize the proposed alternative, "have been introduced in Congress." Vol. 3, p. 67. It is noteworthy that this legislation was defeated after the Secretary opposed it. Tr. pp. 71-74. The possibility of amending the Outer Continental Shelf Lands Act were thus necessary to protect the public in the view of the Secretary cannot be summarily dismissed.

When an alternative course of action exists, whether or not it is within the Secretary's existing authority, that could satisfy environmental and economic concerns relating to a program, that alternative must be treated in a meaningful, non-conclusory fashion. As the court in Committee for Nuclear Responsibility v. Seaborg, 463 F.2d 783, 787 (D.C. Cir. 1971) noted:

[T]he statement has significance in focusing environmental factors for informed appraisal by the President, who has broad concern even when not directly involved in the decisional process, and in any event by Congress and the public.

The point was reiterated in Natural Resources Defense Council v. Morton, 458 F.2d 827, 833 (D.C. Cir. 1972), where the question of considering alternatives outside the jurisdictional power of the agency was raised:

Congress contemplated that the Impact Statement would constitute the environmental source material for the information of the Congress as well as the Executive, in connection with the making of relevant decisions, and would be available to enhance enlightment of—and by—the public.

In the Morton case, Interior argued that it need not consider alternatives which were beyond its power to affect.

The Court of Appeals rejected this argument and required that such alternatives be considered:

While the Department of the Interior does not have the authority to eliminate or reduce oil import quotas, such action is within the purview of both Congress and the President, to whom the impact statement goes. The impact statement is not only for the exposition of the thinking of the agency, but also for the guidance of these ultimate decisionmakers, and must provide them with the environmental effects of both the proposal and the alternatives, for their consideration along with the various other elements of the public interest.

458 F. 2d at 835.

The Sale 40 NEPA materials and the record before this court establish that the Bureau of Land Management and the Secretary gave no consideration to the alternative of separating exploration and development. This cavalier treatment of responsible and reiterated public comments urging consideration of a reasonable alternative to a proposed agency action is clearly inadequate and in violation of NEPA.

No NEPA requirement has ever received greater judicial emphasis than that which prescribes "a detailed statement" and adequate discussion and consideration of reasonable "alternatives to the proposed action." 42 U.S.C. § 4332. The significance of this one section of the Environmental Impact Statement with respect to the NEPA process as a whole has been stressed repeatedly. Natural Resources Defense Council v. Calloway, 524 F.2d 79, 92 (2d Cir. 1975); Chelsea Neighborhood Association v. U. S. Postal Service, 516 F.2d 378, 386-88 (2d Cir. 1975); Monroe County Conservation Society v. Volpe, 472 F.2d 693, 697-98 (2d Cir. 1972); Natural Resources Defense Council v. Mor-

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ton, 388 F.Supp. 829, 834 (D.D.C. 1974), aff'd, 527 F.2d 1386 (D.C. Cir. 1976); Calvert Cliffs' Coordinating Committee v. A.E.C., 449 F.2d 1109, 1114 (D.C. Cir. 1971). See also, Council on Environmental Quality Guidelines, 40 C.F.R. § 1500.8(a)(4). As stated by the Court of Appeals for the Second Circuit in Natural Resources Defense Council v. Calloway, 525 F.2d 79, 92-93 (2d Cir. 1975):

It is absolutely essential to the NEPA process that the decisionmaker be provided with a detailed and careful analysis of the relative environmental merits and demerits of the proposed action and possible alternatives, a requirement that we have characterized as "the linchpin of the entire impact statement," Monroe County Conservation Society v. Volpe, 472 F.2d at 697-98. Indeed the development and discussion of a wide range of alternatives to any proposed federal action is so important that it is mandated by NEPA when any proposal "involves unresolved conflicts concerning alternative uses of available resources," 42 U.S.C. § 4332(2)(D).

Any discussion of alternatives must contain more than "mere assertions" and must provide sufficient data and reasoning to enable a reader to evaluate the analysis and conclusions and to comment on the impact statement. Chelsea Neighborhood Association v. United States Postal Service, 516 F.2d 378, 386-89 (2d Cir. 1975); Silva v. Lynn, 482 F.2d 1282, 1287 (1st Cir. 1975).

The Council on Environmental Quality guidelines properly call for "a rigorous exploration" and adequate analysis of reasonable alternatives so that "options which might enhance environmental quality or have less detrimental effects" will not be foreclosed. 40 C.F.R. § 1500.8(a) (4). This failure of the responsible federal official to carry out "to the fullest extent possible" the procedural pro-

visions of NEPA constitutes a violation of the judicially enforceable duty to adequately consider environmental values.

The Calvert Cliffs' decision pointedly concludes that if the agency's:

decision was reached procedurally without individualized consideration and balancing of environmental factors conducted fully and in good faith—it is the responsibility of the courts to reverse.

440 F.2d 1109, 1115 (D.C. Cir. 1971) (emphasis added).

The Second Circuit has indicated that a decision must not be made until after a complete and adequate impact statement has been considered: "Otherwise, the process becomes a useless ritual, defeating the purpose of NEPA, and rather making a mockery of it." Natural Resources Defense Council v. Calloway, 524 F.2d 79, 92 (2d Cir. 1975).

The record before this court establishes that the Environmental Impact Statement failed to adequately consider an important alternative to the proposed action—separation of exploration and leasing for production—and that the agency's decision to hold Sale 40 was not based on a good faith consideration of this alternative.

D. Failure to Consider Impact of Leasing Alternative Tracts

Those responsible for the tract selection process neglected to examine the potential environmental effect of offering, and accepting bids on, tracts other than those actually proposed and leased.

As we noted earlier, the Secretary has now leased 93 tracts in the Sale 40 area. These leases represent the culmination of a multi-step tract selection process.

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Initially, based on the United States Geological Survey and industry information concerning the potential of a specific region of offshore energy reserves, an area of approximately 6.5 million acres was designated open to "nomination and comment." Tracts covering approximately half this area were "nominated" by industry, i.e., industry expressed at least some interest in leasing these acres. Of the industry-nominated tracts 154 were selected for further study in the Environmental Impact Statement. All of the tracts selected for study were ultimately put up for sale. 101 of these were bid on, and 93 were ultimately leased, with 8 bids rejected. See Appendix "D," infra.

It is clear from the record that nowhere in the lengthy process of considering which tracts were ultimately to be leased did the Secretary or Bureau of Land Management personnel charged with preparing NEPA documents consider the onshore impact of choosing particular tracts, rather than others. They simply assumed that landing of outer continental shelf oil and gas could be had at any point along the coast. Even if the states do not prohibit pipelines, they may restrict their point of entry, requiring a landfall, for example, at the industrialized northern section of the New Jersey Coast or at the refinery areas in the tri-state New Jersey-Delaware-Pennsylvania region. The existence of such a probability imposed on the Secretary the duty to consider the alternative of leasing tracts other than those proposed in Sale 40. It might, for example, improve the revenue from lease sale, decrease pipeline lengths and reduce environmental impacts if tracts contiguous to potentially acceptable pipeline landfalls were utilized.

Testimony by Judith Gresham, Chief of Operations of the Bureau of Land Management, who played a significant role in the process by which tracts were selected for Sale 40, established that the only environmental considerations The Court: Were there in Washington considerations of the pipeline possibility or the tanker possibility in the elimination of some of the tracts? I am particularly referring to the wavy green lines. [Indicating map, Appendix "D"] That was the bulk of the elimination?

The Witness: That was where all of the elimination occurred.

The Court: That was not due to any pipeline consideration?

The Witness: No. . . .

The Court: . . . I take it, neither you nor Washington considered the applicability of the local laws in making these selections for tracts for possible leasing.

The Witness: Not for specific tracts. Correct. We had presentations on land use on onshore impacts. But those were more generalized than applying them to specific tracts that might be selected.

The Court: Those purple tracts with the circle in them, those were tracts on which bids were made? But you rejected them? Why were they rejected? Do you know?

The Witness: Insufficiency of bids.

The Court: No environmental practice!

The Witness: No.

The Court: No pipeline practice?

The Witness: No. They were each rejected specifically for insufficiency of the cash bonus bid.

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The Court: No local law practice? The Witness: Correct.

Tr. pp. 763-64.

E. The Issue of Secretary's Lack of Good Faith

At trial plaintiffs renewed their contention that the NEPA review process was used as post hoc justification for decisions previously made by the Secretary to accelerate outer continental shelf leasing and to hold Sale 40. A strong argument has been made, supported by considerable circumstantial evidence, that the NEPA documents and public hearings were but a charade; that the decision to lease was a foregone conclusion once Presidents and those in their administrations, including successive Secretaries of the Interior, decided some years ago that production of Atlantic hydrocarbons should proceed speedily.

Defendant's own witness, Mr. Robert Bybee, an Exxon executive, admitted that as early as 1965 his company began gathering geological data in the Atlantic area north of Cape Hatteras, based on information, obtained from the Interior Department, that a lease sale was planned in the Atlantic.

- Q. You started [gathering geological data] in 1965. Did you assume then in 1965 sales were going to be made offshore?
 - A. Yes.
- Q. Did you have any information that it was going to be made offshore?
- A. In those days the Interior Department was planning on about a 1970 sale in the Atlantic.
 - Q. They told you that?
 - A. No.
 - Q. How do you know?
 - A. This was informal discussions with those people.

- Q. In the Department of Interior?
- A. Yes.
- Q. They said they were planning on it then?
- A. Well, if you recall in those days they did not have these five-year plans they published. The only way we were ever able to find out what their plans were in the Gulf of Mexico, or of any other place, was to go ask, "What are your plans?" This is how we did our planning.

Tr. pp. 1206-07.

This statement, as well as numerous other written internal memoranda and public statements of responsible government officials tend strongly to demonstrate that firm decisions to accelerate outer continental shelf leasing and to hold Sale 40 were made long before the ostensible decision dates, and before fulfillment of NEPA's requirements, and that the Bureau of Land Management simply went through the NEPA motions in order to validate the decisions previously made.

Although defendant claimed that these decisions were made as a response to the Arab oil embargo, on April 18, 1973, nearly six months prior to the embargo, the President announced his decision to accelerate outer continental shelf leasing and to hold lease sales. At that time, the President directed the Secretary "to take steps which would triple the annual acreage leased on the Outer Continental Shelf by 1979". Pl. Ex. 86, p. 393. The Secretary had, in fact, recommended to the President that this acceleration of leasing occur. Pl. Ex. 103, p. 2. Three months later, on July 11, 1973, the Bureau of Land Management issued a revised proposed schedule implementing the President's directive. The Department of the Interior had decided at that time that leasing would be accelerated; it left open only the final decision about specific sale sites. Pl. Ex. 87.

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p. 7. On September 12, 1973, the Department of the Interior Under Secretary of Energy announced that this accelerated program was required in order to meet future energy needs. Pl. Ex. 87, p. 6.

The Secretary then recommended a further acceleration in outer continental shelf leasing. Pl. Ex. 103, p. 4. The President concurred and on January 23, 1974 stated:

Today I am directing the Secretary of the Interior to increase the acreage leased on the Outer Continental Shelf to 10 million acres beginning in 1975, more than tripling what had originally been planned.

Pl. Ex. 88, p. 84. (emphasis added).

To effectuate this 10 million acre goal, in September 1974, Deputy Under Secretary Jared G. Carter announced to the Directors of the Bureau of Land Management and Geological Survey that Under Secretary Whitaker expected "a firm leasing schedule laid out that definitely includes . . . 10 million acres leased in 1975—not just 10 million acres offered." Pl. Ex. 89.

On November 13, 1974, the President addressed the Governors of the coastal states and announced his commitment to the outer continental shelf plan:

I believe that the outer continental shelf oil and gas deposits can provide the largest single source of increased domestic energy during the years when we need it most. The OCS can supply this energy with less damage to the environment and at a lower cost to the U.S. economy than any other alternative. We must proceed with a program that is designed to develop these resources.

Pl. Ex. 90. Secretary Morton addressed the coastal state governors a day later and reiterated the President's endorsement of an accelerated program: "Expeditious devel-

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opment of the Outer Continental Shelf is the keystone to meeting the Nation's energy needs in the late '70s and '80s." Pl. Ex. 91, p. 1.

The President, in his January 15, 1975 State of the Union address, reaffirmed the commitment of his administration to outer continental shelf leasing, stating:

A massive program must be initiated to increase energy supply, to cut demand, and provide new standby emergency programs to achieve the independence we want by 1985. The largest part of increased oil production must come from new frontier areas on the Outer Continental Shelf and from the Naval Petroleum Reserve No. 4 in Alaska. It is the intent of this administration to move ahead with exploration, leasing, and production on those frontier areas of the Outer Continental Shelf where the environmental risks are acceptable.

Pl. Ex. 92, pp. 49-50.

Two weeks later, when Secretary Morton met in New Jersey with state officials to discuss the outer continental shelf, he maintained a flexible position on some procedural matters but "did not budge from the Administration line that offshore oil must be developed as quickly as possible in order to reduce America's dependencé on imported oil. No delays . . . will be tolerated." Pl. Ex. 93.

In February 1975, Sale No. 37 for the South Texas outer continental shelf, designated as part of the national program, took place prior to filing of the Programmatic Final Environmental Statement. In May 1975, the same events transpired with respect to Sale No. 38 for the outer continental shelf, another part of the national program. Pl. Ex. 100, p. 7.

When the President sent to Congress proposed oil pollution liability legislation on July 9, 1975, he accompanied

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his proposal with the message that energy needs "require accelerated development of our off-shore oil and gas resources." Pl. Ex. 94.

More than two and one half months before the Mid-Atlantic Final Environmental Statement was released, Secretary Kleppe had apparently firmly decided to proceed with the lease sale; on March 3, 1976, he announced that "[c]hronic pollution from the shelf does not—in all probability—pose a serious threat to the Atlantic Coast." Pl. Ex. 95, p. 4. On May 5, 1976, again prior to the release of the Final Environmental Statement, the Director of the United States Geological Survey categorically stated that New York would suffer minimal onshore impact, and in all probability, no oil spill was likely to reach New York. Def. Ex. YY.

Secretary Kleppe announced on June 16, 1976 that he was proceeding with the Mid-Atlantic Sale; the Secretary failed to wait the required 30 days after the May 25, 1976 filing of the Final Environmental Statement with the Council on Environmental Quality. Pl. Ex. 85, pp. 3-6.

That the Department of the Interior had little interest in properly fulfilling its obligations under NEPA is evidenced by a memorandum from Assistant Secretary Hughes. The Assistant Secretary allowed the United States Geological Survey one week to furnish him with information for the Final Environmental Statement on Proposed Increase in Oil and Gas Leasing on the Outer Continental Shelf relating to estimated outer continental shelf oil and gas reserves, likely drilling sites, and whether tankers or pipelines were to be used. Mr. Hughes acknowledged that the "regrettably short response time will likely not allow highly accurate answers." Pl. Ex. 97.

In spite of this strong circumstantial evidence that the decision to proceed with Sale 40 was made without considering the NEPA documents, we decline to base our

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decision that NEPA has been violated on these contentions. To do so would constitute review of the "mental processes" of the Secretary. Under general principles of review of agency action, such an inquiry should be avoided by courts, if it is at all possible to decide a case on other grounds.

[T]he courts should avoid wherever possible making detailed inquiries into the reasons for executive decisions and examining communications among high officials which are the basis of their exercise of judgment. Cf. 8 Wigmore, § 2378(3) (McNaughton rev. 1961); Gellhorn and Byse, Administrative Law Cases and Comments, 617-618 (4th ed. 1960). Not only is this reluctance supported by proper respect for the separation of powers, but by the practical consideration that it is often impossible for a highly placed official to analyze or remember the varied emotional and intellectual reasons for a decision.

United States v. Schipani, 289 F.Supp. 43, 64 (E.D.N.Y. 1968), aff'd, 414 F.2d 1262 (2d Cir. 1969). Consistent with this position, the Second Circuit has recently refused to permit inquiry into internal agency deliberations, absent "strong preliminary showings of bad faith." National Nutritional Foods Ass'n v. FDA, 491 F.2d 1141, 1145 (2d Cir. 1974). See also, Andrews v. Knowlton, 509 F.2d 898, 906-907 (2d Cir. 1975); but cf. Norris & Hirshberg v. SEC, 163 F.2d 689 (D.C. Cir. 1947).

As already demonstrated, there are ample other grounds for holding that NEPA has been violated by the Sale 40 leases. Accordingly, the court need not decide the good faith issue.

III. Remedy

Having determined that the Secretary's decision to proceed with Lease Sale 40 involved a substantial number of independent violations of NEPA, the court is compelled to consider the appropriate remedy. There are a number of main alternatives.

First, the court might enjoin the parties from further proceeding to exercise any powers purportedly granted by the leases executed by the defendant, declaring the leases null and void. Defendant's successor would be required to prepare an adequate Environmental Impact Statement before leasing could be resumed.

Second, the court might allow the parties to proceed according to the lease terms, on the equitable grounds that the bids and payments of over 1 billion dollars, and the activities already commenced, make it desirable to ignore the Secretary's violation of law.

Third, the court might require the defendant to organize a cooperative agency to coordinate federal and industry activities with state and local planning groups in order to minimize the adverse effects of the Secretary's violation of NEPA.

A. Creation of Coordinating Agency

The alternative of requiring the defendants to create a coordinating and unifying organization that would integrate federal, state, local and industry planning so as to minimize adverse impacts is probably the most desirable remedy from a political, economic and social perspective, given the extensive investments already made and the substantial activities conducted by the parties.

The need for such an agency is indisputable. State and local planners seeking either to obtain information concerning activities related to the outer continental shelf, or to

convey their own data or concerns to federal decisionmakers, are confronted by an overwhelming conglomerate of government and private agencies involved in various ways in the leasing, exploration and production processes.

Despite the urgency which past administrations have attached to expanding offshore lease sales and petroleum production, no consolidation of responsibility for the outer continental shelf program in one agency has occurred. There is thus, apparently, no effective top level coordination of outer continental shelf management, practices and studies.

The Department of the Interior shares cabinet-level responsibility for outer continental shelf activities with the Department of Commerce, the Department of Defense, and the Department of State. Within the highest levels of the executive branch, the Council on Environmental Quality and the Office of Management and Budget have substantial, but effectively uncoordinated, powers and duties.

The Department of Interior alone has fragmented its responsibility for federal management of the offshore oil and gas program among at least nine offices, agencies and bureaus: Geological Survey; Bureau of Land Management; Fish and Wildlife Service; Office of Minerals Policy Development; Assistant Secretary, Fish, Wildlife and Parks; Assistant Secretary, Energy and Minerals; Assistant Secretary, Land and Water Resources; Assistant Secretary, Program Development and Budget; and Solicitor.

Additional involved governmental bodies include the Department of Transportation, United States Coast Guard, Material Transportation Bureau, Federal Aviation Administration, Army Corps of Engineers, Office of Coastal Zone Management, United States Navy, Environmental Protection Agency, Federal Power Commission, Interstate Commerce Commission, National Oceanic and Atmospheric Administration.

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Individuals and municipalities concerned about, or involved in, environmental planning may be caught up in the ensnarled attempts of these and other departments and agencies to protect and enlarge their own bureaucratic functions. See generally, Coastal Effects of Offshore Energy Systems, pp. 43-50, 124-140.

This court may have the theoretical equitable power to require the formation of an organization to remedy this lack of coordination. Although NEPA itself is, surprisingly, entirely devoid of remedial provisions, the absence of legislatively explicit remedies has not presented a problem to the courts.

Thus far, the remedy invariably sued for and granted in all but the most exceptional circumstances is an injunction, which prohibits the particular agency from proceeding with the project until an adequate Environmental Impact Statement is filed. There is nothing in NEPA or its legislative history, however, to suggest that the court is limited in fashioning remedies to this all-or-nothing approach, i.e., either a finding that the Act has been substantially complied with, or a ruling that no further activities can be conducted until it is complied with.

In a significant number of environmental cases courts have by dicta recognized that the general principles and powers of equity jurisdiction are applicable and available where NEPA has been violated. City of Romulus v. County of Wayne, 392 F.Supp. 578, 594 (N.D.Tex. 1975) (". . . general principles of equity are applicable in NEPA cases and these principles will control the Court's discretion."); Environmental Defense Fund v. Froehlke, 348 F.Supp. 338, 356 (W.D. Mo. 1972); East 63rd Street Association v. Coleman, 9 ERC 1193 (S.D.N.Y. 1976). These statements have been made in the context of a denial that issuance of an injunction is mandatory for any NEPA violation; however, there is no reason to suppose that the legis-

lature intended to permit this traditional exercise of equitable discretion, but to cut back equally traditional equity powers to fashion appropriate decrees.

The Supreme Court's statement in *Hecht Co. v. Bowles*, 321 U.S. 321, 64 S.Ct. 587, — L.Ed. — (1944), a non-environmental case, applies to the instant suit:

We are dealing here with the requirements of equity practice with a background of several hundred years of history. . . . "An appeal to the equity jurisdiction conferred on federal district courts is an appeal to the sound discredtion which guides the determinations of courts of equity." . . . The essence of equity jurisdiction has been the power of the Chancellor to do equity and to mould each decree to the necessities of the particular case. Flexibility rather than rigidity has distinguished it. The qualities of mercy and practicality have made equity the instrument for nice adjustment and reconciliation between the public interest and private needs as well as between competing private claims. We do not believe that such a major departure from that long tradition as is here proposed should be lightly implied. . . .

[I]f Congress desired to make such an abrupt departure from traditional equity practice as is suggested, it would have made its desire plain. Hence we resolve the ambiguities . . . of that interpretation which affords a full opportunity for equity courts to treat enforcement proceedings under this . . . legislation in accordance with their traditional practises, as conditioned by the necessities of the public interest which Congress has sought to protect.

321 U.S. at 329-30, 64 S.Ct. 591-92. Cf. City of Hartford v. Town of Glastonbury, 76-6049, -6050, -6059, Slip Op. at p. 1105 (2d Cir. Dec. 23, 1976) (". . . [A]n injunction, combining a practical means to a desired end with a mech-

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anism to take account of future developments, is consistent with the broad, flexible nature of the federal courts' equitable powers. See Hills v. Gautreaux, supra, 44 U.S.L.W. at 4484, and authorities cited therein.".

Whatever the theoretical equitable power of this court to require coordinating efforts, as a practical matter this is not a suitable remedy. Courts simply lack the resources to effectively supervise the integration and coordination of the variety of federal, state and local agencies and industry organizations. Reorganization of the federal bureaucracy is a matter for the President and Congress, not the courts.

The Court of Appeals for this circuit has recently recognized the severe limitations on the power of the federal government to compel local and state governments to cooperate in federal programs. Friends of the Earth v. Beame, 75-7497; Friends of the Earth v. Duffy, 76-3054 (2d Cir. January 17, 1977). This court is even more severely limited in forcing cooperation between all levels of government and industry.

B. Ignore the Violation

The alternative of allowing lease activities to proceed in spite of the violation of the law found by the court flies in the face of a strong Congressional policy. Except where there have been extraordinary equities to the contrary, courts within this and every other circuit have enjoined projects proceeding in violation of NEPA until the mandates of the Act have been met. Natural Resources Defense Council v. Calloway, 524 F.2d 79 (2d Cir. 1975); Chelsea Neighborhood Associations v. U.S. Postal Service, 516 F.2d 378 (2d Cir. 1975); Monroe County Conservation Council v. Volpe, 472 F.2d 693 (2d Cir. 1972); Conservation Society of Southern Vermont v. Secretary of Transportation, 508 F.2d 927 (2d Cir. 1974); Steubing v. Brine-

gar, 511 F.2d 489 (2d Cir. 1975); Sierra Club v. Mason, 351 F.Supp. 419 (D.Conn. 1972); Committee to Stop Route 7 v. Volpe, 346 F.Supp. 731 (D. Conn. 1972); Citizens for Clean Air, Inc. v. Corps of Engineers, 349 F.Supp. 696 (S.D.N.Y. 1972).

The injunction serves two distinct purposes: it insures that a project posing serious environmental threats will not proceed absent adequate consideration of viable alternatives, and it furthers public disclosure of all data that should, or might, affect the instant decision and perhaps future decision-making.

of extraordinary equities on the government's side, the requirement of an impact statement must be enforced by an injunction whenever the proposed project poses a substantial risk of damage to the environment and there exists a reasonable possibility that adequate consideration of alternatives might disclose some realistic course of action with less risk of damage. Even if the responsible agency ultimately decides not to pursue such alternative course, the public disclosure of all the pertinent circumstances serves an important policy of the Act, and may well affect governmental decision-making in the future.

Sierra Club v. Mason, 351 F.Supp. 419, 427 (D.Conn. 1972). See also Monroe County Conservation Council, Inc. v. Volpe, 472 F.2d 693 (2d Cir. 1972) (Medina, J. concurring) ("The only way . . . is to require full and strict compliance").

The Court of Appeals for the Second Circuit has emphasized that an injunction is necessary, even if it will have an adverse impact, direct or indirect, on the project, parties, or related industries or segments of the public. "[C]ompliance with NEPA invariably results in delay and concomitant cost increases, and Congress has implicitly decided that these costs must be discounted." Steubing v.

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Brinegar, 511 F.2d 489, 497 (2d Cir. 1975). In a footnote, the court pointed out that Congress was also undoubtedly aware that "NEPA-caused delays" would interrupt employment, or postpone initial jobs, and implied that these are to be discounted, as well, in insisting on compliance with the Act. Investments made by private parties in reliance on the assumption that a project would be completed "were made subject to the risk that the [project] might not ever be completed as a result of state or federal decisions." 511 F.2d at 497 n. 16.

Even if, in the exercise of equitable discretion, we were to give great weight to the economic and social costs to be incurred as a result of the issuance of an injunction, cf. East 63rd Street Association v. Coleman, 9 ERC 1193, 1203 (S.D.N.Y. 1976), the equities would still require such action. Sale 40 exploration and production may profoundly affect the mid Atlantic region and its human and natural resources for at least the next quarter century. An irreversible commitment of resources is now being made, and it poses a substantial threat of irreparable injury. If the potential hazards overlooked or unrealistically evaluated by the Secretary should create actual catastrophes, the adverse impact could be permanent and devastating.

In light of this serious threat, loss of potential profits or sums already committed to Sale 40 activities are not sufficient to warrant denial of NEPA relief. In this regard it is also significant that the substantial economic and technical commitment being made by the oil companies and others is not the result of any tardiness by plaintiffs in their efforts to assert their rights under NEPA. We are not dealing here with an eleventh hour challenge to an already well-advanced project. Cf. East 63rd Street Association v. Coleman, 9 ERC 1193, 1201, 1203 (S.D.N.Y. 1976). At the argument of their appeal from the preliminary injunction, the Court of Appeals warned the oil industry of this court's power to rescind any leases obtained

at the scheduled August 17, 1976 sale, should it ultimately be determined that the Secretary had violated NEPA. Defendant's own witness, Robert W. Bybee, Operations Manager in the Exploration Department of the Exxon Oil Co., admitted that his company was aware of the instant lawsuit and that the company's subsequent expenditures and commitments were considered business risks. In fact, many of these commitments contain provisions for cancellation or "hedging" if Sale 40 is rescinded or enjoined. In addition, those expenses representing outlays for exploratory data will continue to have technical value whether or not Sale 40 ultimately proceeds in its present form following the production of an adequate Environmental Impact Statement.

As a result of the opening of all Sale 40 bids each oil company is now aware of the bidding strategy and information of the others. If the sale is rescinded but eventually rescheduled the companies will bid against each other with maximum knowledge of their competitors' interpretation of its proprietary raw data. Plaintiffs contend that this will result in increased competitive bidding which will insure higher lease payments and a greater return by the public for the resources of the Sale 40 area. The court is not convinced, however, that maximum disclosure will necessarily result in increased competition and furtherance of the public interest. Rather, in balancing the equities in this case, we simply note that there was no evidence adduced at either hearing that re-bidding will result in lower payments than were obtained previously. Rescission of the leases will not, therefore, disserve the public in this respect.

There is no showing of illegal acts by the oil companies. The fact that they must suffer because of the Secretary's failures was considered by the court. The public's rights and equities are paramount and must prevail.

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C. Other Alternatives

In considering the proper scope of any injunction we have examined and rejected alternatives such as allowing exploration to continue, but enjoining production pending preparation of an adequate Environmental Impact Statement. Such a course is undesirable for two reasons. First, to allow the project to proceed will involve the commitment of resources which will either be lost if the project is abandoned or reformed in the light of compliance with NEPA as a result of proper environmental impact evaluation, or which will impermissibly tilt the scales in favor of proceeding.

Second, NEPA requires an evaluation of environmental impact early in the planning phase of a project, so that the decisionmaker has the most options available to reformulate the project to minimize adverse consequences. Once action has been taken, or allowed to proceed, it may be too late to alter the plans, because certain otherwise available alternatives have been foreclosed.

IV. Conclusion

Judged against "a rule of reason," N.Y. Natural Res. Defense Council v. Kleppe, — U.S. —, —, 97 S. Ct. 4, 6 (1976), the Secretary of the Interior violated NEPA. The parties are enjoined from further proceeding with the exercise of any powers purportedly granted by Sale 40 leases executed by the defendant. The leases are declared null and void. This order is stayed pending the completion of appeals, if any.

So ordered.

U. S. D. J.

Dated: Brooklyn, New York February 1977.

APPENDIX C

Second Circuit Judgment, August 25, 1977.

UNITED STATES COURT OF APPEALS
FOR THE SECOND CIRCUIT

At a stated Term of the United States Court of Appeals for the Second Circuit, held at the United States Courthouse in the City of New York, on the twenty-fifth day of August one thousand nine hundred and seventy-seven.

Present: Hon. Walter R. Mansfield

Circuit Judge

HON. RUSSELL E. SMITH

HON. EDMUND L. PALMIERI

District Judges

County of Suffolk, County of Nassau, Town of Islip, Town of Hempstead, Town of North Hempstead, Town of Oyster Bay, Town of Huntington, and the Board of Trustees of the Town of Huntington,

Plaintiffs-Appelles,

Concerned Citizens of Montauk, Inc.,

Plaintiff-Intervenor-Appellee,

v.

Secretary of the Interior, et al.,

Defendants-Appellants,

National Ocean Industries Association, et al., and New York Gas Group,

Intervenor-Defendants-Appellants.

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The Natural Resources Defense Council, Inc.,

Plaintiff-Appellee,

V.

Secretary of the Interior, et al.,

Defendants-Appellants,

National Ocean Industries Association, National Supply Company, Continental Oil Company, Diamond M. Drilling Company, Digicon, Inc., Dresser Industries, Inc., Houston Oil & Minerals Corporation, Levingston Shipbuilding Company, Murphy Oil Corporation, Ocean Production Company, Transco Companies, Inc., & Zapata Corporation,

Intervenor-Defendants-Appellants.

Appeal from the United States District Court for the Eastern District of New York.

This cause came on to be heard on the transcript of record from the United States District Court for the Eastern District of New York, and was argued by counsel.

On Consideration Whereof, it is now hereby ordered, adjudged, and decreed that the judgment of said District Court be and it hereby is reversed in accordance with the opinion of this court with costs to be taxed against the appellees.

A. Daniel Fusaro, Clerk.

By ARTHUR HELLER, Deputy Clerk.

(A true copy,
(A. Daniel Fusabo,
(Clerk

APPENDIX D

Excerpts of George Donkin Testimony.

(1105) • • • Q. Are you familiar, for example, I'm reading now from the Oil and Gas Journal, August 18, 1975.

"With a pipeline that's described as the Vermillion and East Cameron pipeline in Louisiana, 30 inch pipeline was installed in 1973."

A. No, I'm not familiar with that.

Q. Would it surprise you if I told you the cost per mile for that pipeline was \$485,000? A. No. I'll explain why that doesn't surprise me. There's an article entitled "Off-Shore Pipeline Costs Skyrocket," appears in the Pipeline and Gas Journal of October, 1976. This article compares—

Mr. Jensen: Your Honor, this testimony relates to cost skyrocketing well after the period of time the EIS was issued. This is not information that would be available to the secretary.

(1106) The Court: I'll permit him to answer. You asked the question.

A. This article compares current offshore pipeline costs to offshore Gulf of Mexico pipeline costs in 1973, also, and it states, "In that short period," the period being the 1973 through 1976 period, "The indicated increase in the cost of offshore pipeline construction has been almost 150 percent." It also compares the high island offshore system costs, which appear in my testimony and which were submitted in late 1975, "To the estimate cost of the 72 mal 36 inch may line of the stingray pipeline system which results also in offshore Louisiana, and the stingray system costs were \$556,658 per mile. The number that you indicated with respect to 1973 pipeline costs seems fairly accurate.

Q. Do you know the date that was used for the pipeline estimates contained in the Sale 40 EIS? A. Virtually all of

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the investment cost estimates, I believe, were indicated to represent 1976 dollars. I would be surprised that they would have some estimates in 1976 dollars and others in earlier dollars.

Q. Would it surprise you if the estimates for the costs in EIS were 1974 dollars? A. I'm referring to the program at particular PDOD.

(1107) Q. I'm not asking you about that—A. I'm sorry, to the Sale 40 PDOD.

Q. It's your testimony in 1976 dollars are for these costs? A. I'm assuming that they were in 1976, though.

Q. Do you know whether they were 1976 or 1974 dollars?

The Court: What do you say?

Mr. Jensen: I believe 1974 dollars. The Court: Is that what they say?

Mr. Jensen: Yes.

The Court: Let's see what they say. He's talking obout PDOD. The PDOD says 1974 dollars? If not, I'll assume it's '76.

Mr. Jensen: We'll look it up, your Honor.

(1158) A. A large portion of exploratory wells' cost—not a large portion, but part of the costs of drilling relate to the labor associated with that and that is, in all probability listed here on Table 3 at page 6.

At page 7, there is an estimate for salaries for oil field workers through the year 1999. It seems logical to me that you are talking about ild field workers associated with producing oil and natural gas. I wouldn't think there would be very much exploratory well activity taking place in 1999 in this particular area.

Q. Let me ask you if it would be your thought, your opinion, your judgment, that only capital costs are involved in

finding costs? A. Capital costs that I'm assuming here relates to the costs that the oil companies will pay the drilling contractors to drill and complete exploratory wells and developmental wells. That's a capital cost.

Q. Yes, I understand. A. That would include the labor associated with that drilling as distinct from that which appears here on page 7.

(1163) Q. Let's look, again, at page 1 of your second exhibit which is the estimated costs of finding new crude oil in cents per barrel. Under the heading Cost Components, there is a figure given in cents per barrel, BTU exploration overhead; is that right, sir? A. Yes.

Q. Is that a capital investment cost in the accounting sense or in the economic sense? A. It's something that goes towards—should be covered by the finding cost for the commodity.

(1166) • • • Q. What's the basis for that assumption? Exploratory wells are included as an investment capital cost and you've admitted and agreed, I believe, that exploration (1167) overhead costs are not capital costs in an economic— A. The FTC treats them as investments

(1169) A. The development of my exhibit assumes a certain production-to-reserves ratio by year of production.

Q. Yes, that's what I mean. It does assume a—your exhibit does. A. Yes, and that's shown here. Now, I'm aware that in the Gulf of Mexico there are reservoirs that will produce 15 percent of their reserves in a given year. Then you have a much faster rate of decline thereafter, and believe me, I did it several ways. You can change the assumption any way you want to, but the results are going to be the same.

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You will not be able to reach peak production in 1989 as long as you are bringing them on in 1981.

(1174) • • • A. Yes, sir, but the results will remain the same. If you increase the per year of production to 12 percent and keep it constant for three years and then drop it down, you're still going to come up with the same results.

You can't make, in the high case—there is no way you can increase 3,000—3,080,000 mcf per day—

Mr. Lafitte: I'm sorry.

A. —in 1989, if you are going to produce a billion cubic feet a day in 1985 and 240,000 mcf per day in '83, etc.

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